

THE
MEDICAL JOURNAL
OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—4TH YEAR—No. 15.

SYDNEY: SATURDAY, OCTOBER 13, 1917.

PRICE 6D.

NOV 12 1917
UNIV. OF MICH.
LIBRARY
Allen & Hanburys Ltd.

MAKERS OF
SURGICAL INSTRUMENTS

SUPPLIERS TO
H.M. ARMY and H.M. NAVY

ALL INSTRUMENTS ARE OF THE
BEST BRITISH WORKMANSHIP

AUSTRALASIAN BRANCH:
B.M.A. BUILDING, ELIZABETH STREET, SYDNEY

SERUMS

OF THE MERIEUX INSTITUTE, LYONS, FRANCE.

Prepared under the immediate supervision of M. Merieux (late of the Pasteur Institute) by the most approved modern scientific methods.

"INALTER" VIAL



Directions:

Fig. 1. A. represents the "INALTER" Vial—with U tube inside containing 1 gramme of dried serum and 9 c.c. carbolised water (1 gramme dried serum = 10 c.c. liquid serum). The rubber plug which seals the Vial and the U tube is withdrawn and after the contents of the tube have been emptied into the solution, the plug is replaced in Vial, and the contents quickly dissolve. The freshly prepared serum is now ready for use as in Fig. 1. B.

Advantages:

- | | |
|--|---|
| The contents keep indefinitely. | Ready for use whenever required. |
| The preparation of the Serum is speedy, simple and perfectly aseptic. | The freshly prepared Serum has full potency and activity. |
| The Inalter Vial can be supplied with:—Serum, Antistreptococcus—Antitetanic or Antidiphtheritic. | |

NEOCAINE-SURRENINE

Neocaine is a synthetic product of French manufacture.

A Perfect **COCAINE SUBSTITUTE** of Low Toxicity.

A White Powder, readily soluble in water.

Analgesic power, duration, and rapidity of action quite equal to Cocaine.

Toxicity less than one-sixth.

Therapeutical effects identical with Cocaine (excepting as an exhilarant) for Dental or Surgical local and spinal Anæsthesia, Lozenges, Snuffs, Ointments, etc.

Composition of Neocaine-Surrenine:

Pure Neocaine	5 c.g.
Acid Borate of Adrenalin (Takamine)	0.1 m.g.

Pure Neocaine is also supplied.

FORMS.—Powder in capsules and phials. Ready prepared solutions in Ampoules (various percentages), and Ampoules of sterilised liquid for making solutions.

FURTHER LITERATURE and PRICE LISTS.

THE ANGLO-FRENCH DRUG CO., LTD.,

(Late M. BRESILLON & Co.),

Phone: Holborn 1311.

Garage Building, Holborn, London, E.C. 1. Telegrams: "AMPSALVAS LONDON."

Antipyrin, Phenacetin and Pyramidon superseded.

CRYOGENINE

LUMIÈRE.

NON-TOXIC. EFFICACIOUS. HARMLESS.

Adopted by the French Ministries for War and the Navy, also by the Poor Relief Board. Papers on "Cryogenine" have been read before various Medical Societies by over 90 of the most eminent Continental Medical Men. In each paper clinical results of the most satisfactory character are recorded. "Cryogenine" is a white crystalline powder, odourless and almost tasteless; its chemical composition is Metabenzamido semi-carbazide.

Cryogenine has a high reputation as a
GENERAL ANTIPYRETIC and POWERFUL ANALGESIC.

FORMS.—Tablets, Pills and Powder.

"Lancet," Dec. 18th, 1906, p. 1812: " . . . The above case is one out of a number of successful results obtained from the use of this remedy (Cryogenine) contrasted with Pyramidon, which certain writers regard as the best drug for phthical temperature. I think there can be little doubt 'Cryogenine' is the safer and more efficacious antipyretic. . . ."

J. E. G. ———, M.D.



TYPHOID BACILLI
ANTI-TYPHOID.

Enterovaccin consists of Eberth, Coli, and Paratyphoid bacilli; about 600 millions per milligramme. This is put up into spherule form and keratinised in the same way as Rheantine.

Enterovaccin has been tested in districts subject to regular visitations of typhoid epidemic. The experience gained in 4,000 administrations of this prophylactic carried out by approximately 200 Doctors proves that:

1. No one treated with Enterovaccin has been attacked by typhoid fever.
 2. This method of immunisation is without risk.
 3. There are no extra indications.
- 180,000 Inoculations have been given in the French Army by Enterovaccin.

Papers read before the Therapeutical Society of Paris. The Academy of Sciences, Paris, by various Authorities on both Rheantine and Enterovaccin amply confirm the good clinical reports.

Enterovaccin is put up in metal boxes of 28 Spherules.
Dose: 4 per day.

THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. II.—4TH YEAR.

SYDNEY: SATURDAY, OCTOBER 13, 1917.

No. 15.

REMARKS ON THE MORBID ANATOMY OF INSANITY.

By W. A. T. Lind, M.B., Ch.B. (Melb.),
Pathologist, Victorian Lunacy Department.

Excluding a small number of medical men who attend patients in private licensed houses or are medical officers in hospitals for the insane, the majority of the members of the medical profession do not come into contact with insanity unless for the purpose of certification. These circumstances suggested the idea that some observations on the morbid anatomy of patients dying insane, might be of interest to those members of the profession whose daily work precludes attendance at the post-mortem room.

The opinions expressed are based on the examination of over a thousand clinical histories and post-mortem examinations of patients in the Melbourne metropolitan area.

There are comparatively few cases of insanity in which the brain disease is the direct cause of death. Insanity terminates life in an indirect manner. The judgement, will power, instincts, etc., being singly or collectively impaired, the physical health of the patient is damaged by conduct dependent upon this defect, such as neglect of constipation, want of discrimination in diet, neglect of wounds, indifference to suitable clothing, injudicious discarding of clothes to become cool when heated in the summer time, disinclination to take exercise, and many other examples. Other factors due to the mental state which threaten the span of life are sleeplessness, excitement, restlessness, perversion of all the instincts which usually preserve and protect life, and many others. A purely brain death is sometimes found in general paralysis of the insane and extreme dementia, the brain changes in these cases being intense wasting of the nervous tissue and compensatory increase of other intracranial substances. The direct cause of death in all other insane patients is due to disease of organs and tissues, just as in persons who die sane, with frequently this difference, that in the insane the prolonged chair and bed nursing of a patient, demented, and with no energetic response to stimuli from within or without, tends to prolong life to a stage when the pathological changes would have long since ended the life of a sane individual. This explanation is open to argument, but the fact remains that the post-mortem findings of the insane are in many instances an exaggeration of those found in the sane. In addition to the disease of the tissue or organ responsible for the death, there are, of course, in insanity, pathological changes in the brain and cranial contents.

For the purposes of this article these changes can be described in a general manner by adopting the following scheme:—

- A.—Acute Insanities.
(1) Macroscopic Changes.
(2) Microscopic Changes.

- B.—Chronic Insanities.
(1) Macroscopic Changes.
(2) Microscopic Changes.

The term "acute," as applied to insanity, means an attack which may last several months and end in recovery or death, while the term "chronic" denotes a permanent condition. The word "recent" is frequently used in the same sense as the word "acute," and sometimes one hears the term "acutely" maniacal used to express the intensity of the mental symptoms. It will thus be seen that in length of time an acute melancholia is a much longer affair than an acute synovitis, acute nephritis or an acute bronchitis.

A. (1) The macroscopical changes of acute insanity are the least manifest of all the pathological changes in insanity. When the examination is made shortly after death, patients who were mentally excited usually show congestion of the cortex, white matter, meningeal and cerebral vessels; and asthenic deaths usually show anæmia of these parts. It must be remembered, however, as Bolton points out, that the cranial contents lose about 22 c.cm. of blood when the skull is opened (if the head is raised on a block, as is usually the case), due to the alteration in pressure. One of the patients in a private institution near Melbourne who committed suicide by cutting both carotids with a razor, had practically no blood in his trunk and organs, yet the intracranial contents were congested when the calvarium was removed.

Up till middle age there are practically no constant macroscopical pathological changes peculiar to acute insanities; after that age the arteriopathic changes of increasing years, or dyscrasia, may produce mental troubles which, although acute in character, are dependent upon a factor which is chronic in development. These arteriopathic changes are the large, yellow softenings, the small, brownish grey, cystic areas most frequently found in the putamen of the lenticular nucleus, and the red softenings of hæmorrhage.

A. (2) The microscopical change of acute insanity include engorgement of vessels of the cortex and white matter, chromatolysis of nerve cells, with more or less achromatolysis and neuroglial activity (according to the severity and duration of the attack), degeneration of fibres, and alterations produced by œdema, congestion, and minute hæmorrhages.

B. (1) The macroscopical changes of chronic insanity are those of atrophy of the nerve tissue and compensatory changes in the cranial contents to make good the shrinkage of the nerve tissue. This atrophy and compensation is what takes place as normal old age approaches, and when dotage and dementia are compared the resemblance is remarkable. Presbyphrenia, however, is not usually reached in the sane till age is well advanced, while dementia may be met with in comparatively young folk. The brain shrinkage in old age is universal, while the atrophy in dementia, apart from senility, is most marked in the frontal region, perhaps even confined to that region. In the normal brain the left hemisphere is about five

grammes heavier than the right, and when there is dementia, that difference disappears until the left hemisphere weighs less than the right. The reverse is supposed to take place in left-handed persons, but the notes forming the basis of this article do not specify which hand the patient used mostly. The compensatory changes include dilatation of the cavities of the lateral ventricles, excess of cerebro-spinal fluid, and œdema of the pia-arachnoid. This œdema is sometimes called external hydrocephalus, or *hydrocephalus ex vacuo*, and may be limited to the area of brain shrinkage, or spread more evenly over the surface of the cortex, when the wasting is more general. The other changes which indicate chronicity, and are probably due to chronic congestion, are thickening of the calvarium, especially the inner table, thickening of the *dura*, ossification of the *dura*, adhesion of the *dura* to the inner plate in persons other than young children and seniles, increase of subdural fluid, *pachy-meningitis hæmorrhagica*, thickening of the pia-arachnoid, adhesion of the pia-arachnoid to the summits of the convolutions (due to thickening of the vessels running into the cortical substance), toughness of the brain tissue to the knife, and a shrinkage in the *gyri*, causing the intervening *sulci* to appear deeper and wider than normal. In chronic insanity and in senile cases the choroidal plexus shows a cystic appearance, and may have small calcareous particles deposited in its substance. Degenerated nerve tissue is absorbed by the glial cells, which have a phagocytic action, and the same glial proliferation can cause impairment of nerve tissue by cutting off its nutriment supply. Glial proliferation may thus be primary or secondary. It is primary as a result of the action of syphilis or some other irritant, and secondary in building up the areas where the nerve tissue has perished. The granules in the floor of the fourth ventricle are due to glial proliferation heaping up the ependymal lining and producing that frosted appearance found in chronic insanities, and more specially in insanities due to syphilis.

B. (2) The microscopical changes in chronic insanity are degeneration of the nerve cells and fibres, proliferation of neuroglia, increase of cells other than nerve elements in both the grey and white matter, infiltration of the perivascular sheaths of the cortical vessels by small round cells, changes in the walls of the blood vessels, and an increase of small blood vessels in the cortex, as described by Mott, in cases of general paralysis. These are roughly the changes that occur in the brains of persons who have died insane.

In order to appreciate the morbid anatomy of insanity it will be perhaps advisable to summarize briefly the ætiology of mental disease.

In the causation of insanity there are two factors concerned. The first is determined before birth, depends upon parentage, and is the vulnerability of the neurone. The second is the liability to stress, and the two combined are called by Mott "nature and nurture." If the vulnerability of the nerve tissue is great, a small stress may upset the mental stability of the individual, and if there is little vulnerability the stress will require to be severe in

order to cause insanity. It has been said that every mind has its breaking point, those of the sanguine temperament being the most resistant, and those of the neurotic temperament the most frangible. The neuropathic and psychopathic temperament may be intensified by the mating of "nervy" people, who, experience shows, have a mutual affinity for each other. Early symptoms of a nervous instability are seen in the frequency of nightmares, deliriums and loss of self-control in the children of neurotic parents. The stress may be of any kind. The end result is the same, damage to the neurone, temporarily or permanently. If the neurone cannot obtain its nutriment, or get rid of its waste matter, or if it is acted upon by some toxin in the blood, it suffers according to the degree of its vulnerability. A toxin circulating in the blood, lack of nourishment, as in starvation and insufficient feeding, deprivation of oxygen, as in anæmic states, produce sickness and perhaps the death of the cell and its fibres, in this way interfering with the normal function of the mind. In arterio-sclerotic or glial conditions the diminution in the blood supply starves the neurone, and the cell is also poisoned by its waste products, of which it cannot get rid. Worry and grief act as a stress by producing indigestion and constipation, the toxins of which are absorbed from the bowel. The neurones which are the first to be affected through a stress, are the ones which have developed last, and, as Bolton shows, these are the ones which lie in the pyramidal layer of the prefrontal area. The clinical symptoms accompanying trauma, tumours, etc., have given good reasons for this to be regarded as the part of the brain associated with the higher sentiments of religion, honesty, equity, self-control, and all that distinguishes man from the beasts. If these nerve elements become temporarily damaged, the patient's conduct shows the change known as the "alteration in the ego" until repair takes place, and if they are permanently damaged the patient suffers from a state of feeble-mindedness called "dementia," in which the finer qualities of the character and intelligence are absent, according to the extent of the damage done. If the patient is relieved from the offending stress, the mind will recover, but if the condition is such that the stress cannot be counteracted, then the case will drift on to dementia. The prognosis depends upon the vulnerability of the neurone and the nature of the causative agent.

Even if the agent damaging the neurone can be corrected, whether it be anæmia, copræmia, toxæmia, kidney insufficiency, or what not, it will be a long while before any mental improvement is detected, because the affected nerve cells must rebuild themselves before they can functionate properly. Mott considers that they rebuild their tigroid material from the lipid substances of the cytoplasm by the aid of a nuclear ferment. The length of time required for this accounts for the duration of even the very shortest of mental diseases. Some cases are from the first obviously hopeless, on account of the nature of the causative agent. Careful examination of the physical health of every patient will show that every person who becomes insane is suffering

from some bodily ailment in addition to the mental trouble, the former being in all probability the cause of the latter.

In congenital insanity, commonly classed as congenital mental deficiency, there can be distinguished two main classes, the idiot and the imbecile. At one time it was taught that the difference between the two was that the imbecile was capable of being taught and the idiot was hopeless in regard to education. There is, however, a greater difference than that. The idiot has a brain so imperfect that it is incapable of any intelligence, or response to its surroundings other than reflex. This may be due to maldevelopment of the nerve elements, or damage through disease or injury. On the other hand, the imbecile suffers from the undevelopment of his brain, which suggests an attempt at reversion to an inferior type of brain, with simplicity of convoluted pattern and a deficiency in the make-up of the cortical layers and the association fibres, to the intellectual disadvantage of the individual. There is no active brain disease present in the imbecile, the mental symptoms being solely those of intellectual deficiency, associated with a weak control of the primitive instincts.

In gross brain abnormalities associated with congenital insanity, the period of intrauterine life at which the fault in development occurred, can be fixed by reference to the known stages in the development of the central system, for example, in the case where the two cerebral hemispheres failed to divide at the anterior pole, it is known that the trouble dated from the end of the first month of development, and if it is found that microgyria is associated with a confusion of convolution pattern, then there are good reasons for ignoring the explanation of the parents that the mental trouble is the result of an obstetrical blunder. Of all the organs to show signs of disease at an examination of the body of an insane patient, that most frequently affected is the kidney. The changes in this organ are of a chronic nature, ranging through all degrees of fibrosis and degeneration. The majority of the patients that are examined post-mortem at the Hospital for Insane, Kew, show chronic kidney disease. Of 459 consecutive patients received at Kew, there were 103 who had albumin in the urine. Kew, however, receives a large number of old-age pensioners who have become insane and who die shortly after reception. On the other hand, among 855 patients admitted consecutively to the Acute Mental Hospital, Royal Park, only 61 had albuminuria.

Arterial changes occur with the next greatest frequency. Acute endocarditis is relatively rare. Myocardial changes are frequent, and are especially noticeable in the right ventricle wall. Atheromatous degeneration occurs with great frequency, and at a much earlier age than in the sane. This early onset of atheroma, associated with fibrotic changes in the kidneys, spleen and liver, occurs with unusual frequency in the dementias which develop early in life, and suggests that syphilis is a frequent factor in the forces which impair the neurone and cause mental diseases. In general paralysis of the insane

atheroma of the aortic arch is the rule which has but few exceptions. In the elderly patients, cerebral hæmorrhage and conditions dependent upon degeneration of the cerebral vessels are common. In the alimentary system malignant disease is occasionally noticed, and colitis is a frequent cause of death in the elderly patients.

A very common post-mortem finding in these cases is abnormal peritoneal adhesions between the under surface of the liver and the small intestine. These occur with great frequency, but there is no indication of any causative agent.

Dilated stomachs are the rule with the congenital mental deficient who are gross feeders.

The spleen frequently shows thickness of the capsule, ranging from the "milky" of a supple capsule to the irregularly thickened capsule of almost cartilaginous density.

Gall-stones are very common, and it is not an uncommon occurrence to find a "dried-in" hydatid which has caused the host no inconvenience.

In the respiratory system the most frequent pathological change, apart from the different kinds of pneumonia, is the emphysema of the lungs, which is rarely absent in chronic epileptics, and is very frequently found in general paralysis of the insane. Lobular, insufflation and diffuse pneumonias are more common than lobar pneumonia. Chronic delusional insanities, as a rule, have a chronic physical disease, which may or may not have caused subjective symptoms during life. It frequently happens that a patient has delusions of persecution which worry him considerably, while he makes no complaint about the discomfort of a physical ailment. One patient in particular, who had chronic delusions of persecution, was found post-mortem to be infested with hydatids throughout the chest and abdomen. During life he had not complained of any physical pain, which had apparently been transmuted into mental discomfort—a kind of allocheiria.

In the endocrine system the thyroid shows the greatest variation in appearance. In some subjects it will be large and the substance normal in appearance, while in other cases of the same class of insanity it will be large and glistening, or cystic, small, or like muscle tissue on cross-section.

Abnormalities in the ductless glands do not appear to be present with any special frequency in insanity.

The ovary seems to undergo atrophic changes in the dementias occurring in early adult life. The testicle does not appear to undergo corresponding atrophy. There have been isolated instances of persistent thymus, Meckel's diverticulum, and other curiosities of a vestigial character which do not seem to have any constant association with mental disease, and are regarded in the same light as stigmata.

When the pathology of insanity was first discussed, there was an attempt to allocate distinct areas of the brain to certain mental qualities, for example, suspicion, homicidal mania, and hoarding instincts were said to have their centres in the tem-

pero-sphenoidal lobe, and the emotions and sentiments in the occipital lobe. Later on there was a theory that each individual neurone possessed a special psychic function.

With the exception of those who follow the teaching of Freud and Jung, the alienists of to-day accept the theory of the functional significance of the different cell lamina in the cerebral cortex, as worked out by Bolton. This fixes the associative, psychic and educative faculty in the pyramidal layer of the cortex, especially those of the frontal lobe. These are the last to be developed from the embryonic cells, and, according to the rule of "the last to come the first to go," they appear to suffer the effect of the stress first, thus producing a resultant change in the mind of the individual.

Many attempts have been made to fix constant microscopical pathological changes for special types of insanity, but so far the attempts have produced such varied results that they cannot be accepted. The stage has not yet been reached when the microscopical study of a brain can disclose the clinical picture in the same way that the study of the lung under the microscope indicates whether the pneumonia was lobar or lobular. General paralysis is an exception to this, the changes in this disease being very distinctive.

It can be ascertained from the macroscopical and microscopical appearances of a brain whether the insanity is an acute or a chronic one, and in the case of general paralysis and tabo-paresis there are special appearances peculiar to these diseases, which are really a form of syphilis of the brain; but at present that is the only evidence that can be taken into the witness box. There have been described all kinds of pathological discoveries in idiopathic epilepsy, from sclerosis of the *cornu ammonis* to degeneration of the medium-sized pyramidal cells in the cortex, but no definite constant has been reached. The same may be said concerning the work done on *dementia precox* and other special types of insanity. The pathology of the special types of insanity must stand in abeyance until there is more known concerning the physiology of the frontal lobe. In the meantime, there is much interesting work to be done in adding to the knowledge already obtained concerning the aetiology of insanity, with a view to prevention and relief. Books on psychiatry are not often found in the library of the medical man in general practice, and his association with an insane patient, as a rule, commences with the signing of the committal certificate and ceases when the patient disappears behind the doors of an institution. With the present day of receiving houses, acute mental hospitals and hospitals for the insane this state of darkness should pass away and more interest taken in mental diseases.

References.

- Bolton—"Brain in Health and Disease."
Mott—*Archives of Neurology*.

Reports of Cases.

ROUGH CLINICAL NOTES UPON SOME RECENT INTERESTING SURGICAL CASES.¹

By L. M. McKillop, M.S., M.B.,

Honorary Assistant Surgeon, Mater Misericordiae Hospital, Brisbane.

Case I.—Multiple Perforation of Bowel.—While out opossum shooting some distance from Brisbane about 7 weeks ago a young man (C. D. S.), 25 years of age, accidentally discharged his pea-rifle, and the bullet—a 22 extra long—penetrated his abdomen. This happened at 8 p.m., and his friends managed to carry him to a neighbouring house, whence he was removed per ambulance to the Mater Misericordiae Public Hospital. I saw him at 1.30 the next morning, and his condition was then as follows:—A thin, spare young man lying in dorsal decubitus with his knees drawn up. His temperature was 36°C.; his respiratory rate was 44 per minute and entirely thoracic; his pulse was beating 130 in the minute and was soft and dicrotic. His face was pale and expression anxious. His *alae nasi* were working. The anterior abdominal wall was quite rigid, and the left rectus standing out more prominently than the right. The wound of entry of the bullet was 1.25 cm. to the left of, and slightly above the umbilicus. As the damage done within was obviously serious, an immediate exploration of the abdominal cavity was carried out without waiting for reaction. The peritoneum was incised, and a large amount of fresh, fluid blood was encountered. This was quickly removed, and it became obvious that the small intestine had been perforated in many places. The wound was enlarged and the greater part of the small intestine brought out of the abdominal cavity. Four loops of ileum were found to have been completely perforated, making 8 wounds of the intestine in all. The two wounds in the most superficial loop were closed by three rows of Lembert sutures, using fine Pagenstecher thread. For some reason the wounds in the next loop were smaller and more circular, and were closed by two purse-string sutures, superimposed. The bullet, on reaching the third loop of ileum, had torn a nasty hole in the junction of the bowel and the mesentery. The damaged piece of mesentery and a slightly larger piece of bowel were excised, and an ordinary end-to-end anastomosis done by the method of Connell, two superimposed Lembert suture lines being used. The two wounds in the most posterior loop of bowel were rather oval and were closed by linear sutures. The bleeding, which was very troublesome, appeared to be coming from the lower pole of the left kidney. I therefore decided, in view of the patient's serious condition, to trust to packing it off with gauze. The pelvis was then cleared of the remainder of the blood and of a few fragments of beans of which the patient had had a meal the evening before. A large drainage tube was then placed down into the pelvis and the wound partially closed by suturing in layers. By next evening the temperature of the patient had risen to 38.3°C., and pulse rate to 114, and the respirations became more frequent—about 28 per minute. This state of affairs continued on and off for some days, a pronounced cough with expectoration also developing. I put the patient on eserine salicylate and pituitrin hypodermically, and he began to pass flatus on the day following operation. Under a general anæsthetic the gauze was removed from the kidney pouch on the sixth day and a drainage tube inserted to carry off any serous oozing. After recovering from the anæsthetic, the patient spat up a large amount of dirty-looking sputum, but the abdominal condition continued to improve. His respirations, however, continued to increase in frequency, and were now never under 32-40 day or night. Coarse râles could be heard over each base, and the patient began to sweat at night. I asked a member of the medical staff, Dr. F. W. Page, to examine the chest, and we both agreed that the sputum had better be examined. Dr. Harris, of the Bureau of Microbiology, reported that it contained tubercle bacilli. From then on the lung condition got

¹ Read at a Meeting of the Queensland Branch of the British Medical Association on July 6, 1917.

rapidly worse, and attacks of cyanosis occasionally came on. Meanwhile, the intestinal condition rapidly improved, and formed stools were passed. There was no vomiting, a fairly clean tongue, and no hiccup; the whole abdomen was flat and perfectly soft, and no abdominal pain was felt. The patient's sputum now became very offensive, and increased in amount; the acute phthisical condition terminated his life on the 20th day after the accident. Inquiry revealed the facts that the patient had had two attacks of dry pleurisy a few years before, and that he had had a slight night and morning cough for some months. His mother has had active tubercle of the lungs for 12 years, and is still alive.

The lesson to be learned from this case is that a grave accident, associated with shock, hæmorrhage, and even a few days' comparative starvation (apart from nutrient enemata) had converted a more or less passive chronic pulmonary tuberculosis into an acute fulminating and quite hopeless phthisis. During the course of the operation for repair of the intestinal wounds, the patient's condition was exceedingly bad, and I have to thank Dr. F. W. Page for the great care with which he administered the anæsthetic.

Case II.—The second case to which I would direct your attention is that of a young woman, the interest of whose case is largely medico-legal. Miss K., aged 19 years, was brought by her mother to the Out-patients' Department with the history that she had never menstruated. She was a well-built and finely developed young lady of comely appearance. Her breasts were well formed and her pelvis of normal size. As I could find no opening to the vagina I admitted her, and a couple of days later, under an anæsthetic, made a pelvic examination. The external genitalia were normally developed, and there appeared to be an intact hymen. But on incising this no vagina could be found. Rectal examination also revealed the fact that she had no vestige of a uterus. To make matters worse, she is engaged to be married to a young man who is away on active service.

Case III.—The third case is interesting from possibly quite another point of view—the Workmen's Compensation Act. Miss C., a young woman of 20, was admitted to the Mater Misericordie Public Hospital about five weeks ago, with vomiting, abdominal pain, a pulse-rate of 120, and a temperature of 37.7° C. She had had a little pain beneath the right rectus muscle about 2.5 cm. above the umbilicus. There was no tenderness over the appendix nor in the pelvis; no tenderness over the gall bladder, and she had not been jaundiced. On deep pressure a mass could be felt below the liver. It was slightly tender, and did not move on respiration, and had no definite outline. The temperature fluctuated somewhat, and on two mornings after admission it was over 36.7° C. But the danger signal—a fast pulse—was still hoisted. As this was gradually increasing, I decided to explore, and on opening the abdomen through the rectus sheath, found a large retro-peritoneal abscess internal to the ascending colon and just outside the second part of the duodenum. As it could not be drained from the back or side, the intestines were carefully packed off with gauze and the abscess opened by Hilton's method, so as to avoid injuring the blood supply to the colon. Stinking, gas-laden pus was encountered. A fair-sized rubber drainage tube was then placed in the abscess cavity, and through this pus continued to drain for over a fortnight. Owing to the proximity of this abscess to the ascending colon and its vessels on the outer side, to the duodenum on the inner side, to the inferior vena cava behind, care had to be exercised in arranging drainage. As to the causation of the abscess, the patient stated that 14 days before, while serving a customer in the restaurant in which she worked, she struck her side violently against the sharp edge of a table, and that a few days later much tenderness developed at the site of the injury. In regard

to the cause of the infection of the pus with *bacillus coli communis*, I incline to the belief that she must have ruptured her duodenum, as the ascending colon appeared to be quite intact. The only other explanation is that it was a blood-borne infection, but I am not aware that the colon bacillus is able to travel about in the blood stream. Since writing the above notes, the patient has completely recovered, and is about to leave hospital.

Case IV.—Gas gangrene and tetanus arising from a compound fracture. This was a most unfortunate case. Miss E.G., aged 26, an actress, fell from a height of 150 cm. (5 feet) into a garden, in South Brisbane, and fractured the right forearm. She was given first aid by the Civil Ambulance bearers, and conveyed to the Mater Misericordie Public Hospital. The forearm was examined, and the injuries found to consist of a simple fracture of the radius in the middle third and of a compound fracture of the ulna of the same level. Unfortunately, the bearers, with misdirected zeal, had dragged the protruding upper fragment into place, and thus prevented its proper disinfection. The small wound was well cleaned out with tincture of iodine, and the forearm put up in full supination with flexed elbow, on simple back and front splints. A prophylactic injection of anti-tetanic serum was ordered, but owing to an unfortunate error—caused by the order being written on the back of the admission card and thus being overlooked—was not given until three days later. By this time the forearm was beginning to show slight inflammatory signs. The wound was therefore irrigated with eusol, the splints changed, the serum which had been overlooked was given, and hot perchloride fomentations applied every two hours. Two days later some stiffness of the jaws was noticed, so another dose of anti-tetanic serum was given, and repeated thence twice daily. As the arm was now very swollen, it was decided to make multiple longitudinal incisions into it, and place it in a eusol bath. A very little, but most offensive, pus began to drain from the fracture wound, which had been thoroughly opened up. There was scarcely any elevation of temperature, but the arm went rapidly to the bad. The inflammatory oedema spread upwards to the axilla, the circulation below the elbow ceased, local cyanosis set in, and it was evident that septic thrombosis was at work. The tetanic spasms had by this time practically ceased, and the patient could open her mouth much more widely. In view of the grave condition of the arm, it was decided, after consultation, to amputate through the shoulder joint. This was immediately carried out, a superior and an inferior flap being fashioned but not sutured. The patient, though she rallied well after coming out of the anæsthetic, quickly suffered from a serious and persistent fall of blood-pressure, and died of syncope 36 hours later. Not more than 50 or 60 c.cm. of blood was lost during the operation, which took altogether only five minutes, but evidently the intense toxæmia from which she was suffering, coupled with the shock of section of the brachial plexus, caused the fatal issue. The pus which had been coming from the original wound had a very fecal smell, and was accompanied by a large amount of free gas, which could be felt crepitating beneath the skin of the arm above, as well as below the elbow. On the day previous to amputation greenish patches developed in the skin of the forearm, wrist and hand. The infection, which was manifestly caused by one of the gas-producing organisms, probably the *micrococcus aerogenes capsulatus*, was exceedingly virulent when it once began to spread. I have only once seen a more acute gas infection, and that was in the case of a nightman at Blackall, who, when drunk, lay on the railway line, and was run over by a train late at night. His left foot was cut off across the instep, and, as his trousers and boots were filthy with nightsoil, it was expected that a nasty infection would arise. The stump was carefully cleaned up, bleeding stopped, and the face of the wound left open for drainage, but in a few hours a most virulent gas bacillus infection set in, with intense intoxication and delirium. Pure hydrogen peroxide was injected right around the circumference of the limb near the groin, a ring of liniment of iodine painted around the leg, and free incisions made everywhere, but nothing could limit the rapid upward spread of the infection. His delirium increased, the blood pressure fell rapidly, and death ensued in less than 20

hours from the time the injury was sustained. Though quite a young man, the patient was a chronic alcoholic, and no doubt this greatly helped to deteriorate his power of resistance to infection.

A CASE OF PROGRESSIVE LENTICULAR DEGENERATION.¹

By H. Swift, M.D. (Cantab.),

Lecturer on Medicine, Adelaide University.

The child, Elsie S., *et.* 7½ years, was admitted under me at the Children's Hospital on June 21, 1917. She was quite well up to seven months ago, when it was noticed that she had trembling in the hands, especially when she wanted to use them, and that she staggered about in walking. She was very unsteady on her feet, and easily got tired. She often complained of giddiness, especially in the morning. She was very thirsty, and the saliva would at times dribble from the corners of her mouth. She cried very easily, and also laughed in a silly fashion. There was involuntary micturition. She had gradually been getting thinner, and her symptoms were getting worse. She was very nervous, and "twitched" a good deal. She had had no previous illness.

Family History.—There have been eight other children; one, a girl, aged 10 years, had died eight years previously. The mother said that she had been ill in the same way as this child, with trembling in the hands, which caused her to drop things, staggering gait, loss of memory, dribbling of saliva and incontinence of urine. She was ill for three years, and was bed-ridden for 18 months. She could not speak, and could not move hand or foot. She wasted away gradually, and died extremely emaciated. The mother had always been healthy. The father was supposed to have had "water on the brain" when young.

Present Condition.—The patient's mental condition is very emotional. She cries very easily, also laughs in an imbecile manner. There is no apparent paralysis of the face muscles, but the saliva dribbles from her mouth, which is often kept widely open.

Eyes.—The pupils are equal and active. There is no squint and no nystagmus. The vision is apparently normal. The fundus are normal. There is a marked tremor when she holds the arms out, which is aggravated by attempting to grasp things. These attempts are associated with a good deal of incoordination. The muscles are spastic, and there is some wasting. The muscles of the thenar and hypothenar eminences are, perhaps, slightly wasted, but the *interossei* and *lumbricales* are unaltered. There is no wasting of the muscles of the shoulder. No tremor is noted when the muscles are at rest.

The reflexes are exaggerated. There is no jaw reflex. The Babinski phenomenon is negative and the plantar reflex flexor. There is no Rombergism. The patient has some tendency to fall forward, but she has a habit of holding her head forward, and also of throwing her head forward and backward. The gait is staggering and uncertain, but is not the "scissor" gait.

The liver dulness is normal, and the edge is not hardened. The spleen is palpable. Incontinence of urine is present. The diagnosis arrived at is progressive lenticular degeneration. A description of this disease is given in Garrod, Batten and Thursfield's book on diseases of children.

Reviews.

ANÆSTHETICS.

A little book by Dr. Blomfield² is one among many similar small works on anæsthetics, published in recent years, de-

¹ Read at a Meeting of the South Australian Branch of the British Medical Association on July 26, 1917.

² *Anæsthetics: A Practical Handbook*, by J. Blomfield, M.D.; Fourth Edition; 1917. London: Baillière, Tindall & Cox; Crown 8vo., pp. 147, illustrated. Price, 4s. net.

signed to supply the needs of students and of practitioners not specially versed in the subject. It differs, however, from most of the others in having reached its fourth edition, and in obviously having come to stay. This appreciation is evidently owing to the complete and yet concise way in which the essentials are dealt with. The size of the book has been kept down, mainly by deleting such material as only the expert calls for, and as should be sought in the more comprehensive works. Space has been found, however, for brief descriptions of recent methods and apparatus. The matter is clear and practical, a fair number of illustrations adding clearness to descriptions. Reference has been freely made to the late Sir Frederick Hewitt's book. More careful revision of this edition might have eliminated the paragraph containing the recommendation of the obsolete measure of the injection of strychnine and of alcohol in cases of circulatory failure in which the pulse has ceased, and have substituted head-down version. The dosage of morphine advised for pre-narcosis needs revision. In the opinion of many anæsthetists, the 0.015 gm. (gr. ¼) dose recommended by the author is needlessly large and prone to favour embarrassing respiratory depression during or after anæsthesia. Apart from these blemishes, this book can be confidently recommended as fulfilling the purpose for which the author has designed it.

GENERAL MEDICINE.

The Medical Annual for 1917³ is built up on lines similar to those of former years. The whole field of medical practice, special and general, is covered, and everything new of any value that has appeared during the past year is adequately set forth. The influence of the war is strongly reflected in the pages of the volume. There are sections on shell shock, psycho-neuroses, soldier's heart, injuries to the head and spine, and fractures. We notice also, amongst innumerable other things, references to Rammstedt's pyloroplasty in congenital pyloric stenosis, Schick's test for immunity against diphtheria, cerebro-spinal meningitis, syphilis and tuberculosis. Australian medical literature is not extensively quoted, but there is a reference to boomerang leg, described and illustrated by A. Breinl and H. Priestley. The book is illustrated with a large number of excellent plates and figures.

AUSTRALIAN ARMY MEDICAL CORPS COMFORTS FUND.

This week we have but one fresh contribution to acknowledge. In expressing our gratitude to the donor, we would take the opportunity of asking those who have not yet contributed, not to allow our appeal to be in vain. In three successive weeks we have received four, two and one subscription.

	£	s.	d.
Amount previously acknowledged	69	12	0
Dr. J. Foreman (Sydney)	5	5	0

Our attention has been directed to the fact that the Insurance Office of Australia, Limited, of Queen Street, Melbourne, has been confused with the Life Insurance Company of Australia, Limited. The former office undertakes fire, accident, marine and workers' accident insurance. Information concerning the medical appointments in connexion with the latter company will be supplied to any member applying for the same to the Honorary Secretary of the Victorian Branch of the British Medical Association.

On October 3, 1917, it was resolved in the Legislative Assembly that a Committee of the whole House should consider the expediency of bringing in a Bill to amend the existing Medical Practitioners' Acts.

³ The Medical Annual: A Year-Book of Treatment and Practitioner's Index; 1917; Thirty-fifth year. Bristol: John Wright & Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.; Demy 8vo., pp. 787. Price, 11s. net., post free.

The Medical Journal of Australia.

SATURDAY, OCTOBER 13, 1917.

The Lesson of New South Wales.

In another column we publish the first of a short series of articles on the organization of the medical profession in connexion with the lodge agreements in Victoria. We learn that the members of the Victorian Branch, with but few exceptions, are of one mind in regard to the questions at issue. When the medical officers of lodges send in their resignations, it will be demonstrated how many are prepared to support the profession in its demand for equitable conditions of service. On October 5, 1917, a few proposals were discussed by the delegates of the local medical associations in New South Wales and the members of the Council of the New South Wales Branch of the British Medical Association concerning the Common Form of Agreement, which has now been in force since January, 1914. As will be seen from the records of the meeting, which will be published in next week's issue, the main principle of uniformity is valued, and no modifications have been adopted to meet local difficulties. That the New South Wales agreement is eminently satisfactory is demonstrated by the fact that lodge secretaries insist in the vast majority of instances that a new lodge medical officer shall be a member of the New South Wales Branch. Wherever the agreement has been introduced, it has worked well, and lodge secretaries, lodge members and lodge medical officers alike are now recognizing the immeasurable advantages of a fair contract. During the time before the lodges accepted the agreements, several members of the medical profession suffered undoubted hardship. Thanks to the assistance extended by the British Medical Association to those who lost temporarily, the amount of actual sacrifice was relatively small, and, at the present moment, few of the men doing lodge practice have reason to complain. The lodge patient, too, suffered but little. In some cases, he entrusted himself to the tender mercies of an out-

side practitioner, and usually discovered his mistake during a short illness. The remedy largely sought was to become the private patient of his old lodge medical officer, until the lodge accepted the terms of the Common Form of Agreement. Incidentally, it may have cost the lodge member some extra money to obtain adequate medical attendance while the lodge employed a medical practitioner in whom he could have no confidence. Should this be so, the fault was his own and that of other members of lodges, in imposing conditions on their medical officers which were unjust and illogical. He now knows and admits that the terms of the Common Form of Agreement are not oppressive, and are fair, and he is quite content to carry out his part of the contract. Contract practice is admittedly an undesirable arrangement, but of all the proposals put forward to guarantee medical attendance to persons of small means, it is usually regarded as the least objectionable. As we have pointed out on many occasions, contract practice on terms and conditions which are unjust and a burden to the one party of the contract, must result in dissatisfaction to both patient and medical officer. The existing Common Form of Agreement, although not ideal in every detail, has removed the feeling of dissatisfaction on the part of the medical officer, and the fear of neglect on the part of the patient. Even the lodge secretaries have learned to recognize that it is a vast improvement on the older contracts.

THE ENDOWMENT OF CHEMICAL RESEARCH.

The appeal of the Ramsay Memorial Committee for subscriptions to raise a sum of £100,000 to establish Ramsay Research Fellowships, tenable wherever the necessary equipment may be found, and to institute a Ramsay Memorial Laboratory of Engineering Chemistry in connexion with University College, London, draws attention to the value of research as an instrument in promoting national efficiency. The President of the Committee is the Right Honourable H. H. Asquith, who has written the appeal. The Vice-Presidents are the Prime Minister, the Ambassadors of the Allied Powers, the Ministers of the chief neutral nations, the Chancellors of the Universities of Cambridge, London and Glasgow, the President of the Board of Education and the President of the

Royal Society. Lord Rayleigh is the Chairman of the General Committee. The Committee state that they would hesitate to ask for this sum during the present struggle, if they did not feel that the war has shown the supreme importance of chemistry in its varied applications to the continued existence of the nation while the war lasts, as well as to its survival in the industrial struggle which must follow the war. They believe that it is incontestable that chemistry will be, in the future, as important in trade and commerce as it is to-day in war. They point out that Germany had, in proportion to population, forty trained chemists for every single chemist in the British Empire at the outbreak of the war. They consider that the problem of the production of food, which is so urgent in Great Britain, would be far less acute, if the help of chemistry had been sought in the preparation and use of nitrates for the cultivation of the soil, when Sir William Crookes sounded his warning in 1898.

A national calamity has awakened the people of the Empire to the need of encouragement for research. It has, indeed, been recognized for years that knowledge is the basis of progress, but the scientific man has found the path of investigation beset with obstacles. The community has considered scientific work of little value, and has offered no inducement to any person to continue scientific studies. The young graduate has discovered that his colleagues hold that ability to carry on research work is no sign of professional attainments, but rather a manifestation of ineptitude for the practice of his profession. The older graduate has found that his acceptance of the poor remuneration offered to those who work in laboratories, has stamped him with inferiority. Not only is there discouragement in this way, but the governing bodies of Universities and the authorities controlling public laboratories, consider that research forms no part of the work for which the salary is paid. A day's work must be done before research is begun. In consequence, most research is performed in the hours that should be devoted to recreation.

Modern conditions demand not only great inventors, but a sufficiency of trained investigators to guide the processes of production. A nation needs not only a Perkin to discover aniline dyes, but a supply of chemists to continue the industry as it develops, if

it would retain its pre-eminence in this direction. We shall do well to hearken to the voices of those entrusted with the guidance of our Empire in these hours of stress, who bid us make provision for the facilitation of research and the training of men capable of assisting their country in its travail. We must see to it that no person, willing and able to do original work, lacks the opportunity. Not only must laboratories and equipment be available, but the investigator must receive a share of the rewards which fall to those who promote the public welfare.

PROTOZOA IN DYSENTERY.

Every protozoologist who has investigated the stools in cases of dysentery or related intestinal affections, has recognized the difficulty of finding the infecting agent, and has determined that several examinations are needed before a negative result may be accepted. Much ingenuity has been exercised in reducing the number of resultless searches, and in estimating the diagnostic value of a given number. Hitherto, three examinations have been regarded as the minimum, although Dobell, in a report to the Medical Research Committee, has produced evidence in favour of a considerably larger number. It should be recognized that even if so many examinations are needed to disclose every case that this ideal has to be relinquished when large numbers of stools have to be dealt with, this knowledge would be of considerable practical importance. From it the protozoologist would be able to ascertain the proportion of probable infections which would be detected after a given number of examinations, and in this way the risk of a spread of infection through the medium of carriers could be more or less accurately estimated. Incidentally, it may transpire that an efficient campaign in an infected area may have to depend on the assumption of a widespread amount of infection, and, consequently, it may be necessary to apply remedies wholesale, at the same time as sanitary measures are being enforced. In order that more accurate information might be available, the workers at the Liverpool School of Tropical Medicine have undertaken an extensive investigation, and now publish a second report.¹ The signatories to the report are Henry F. Carter, Doris L. Mackinnon, J. R. Matthews and A. Malins Smith. They have examined the stools of 1,713 persons who were suffering from dysentery or some related affection, and carried out no less than 8,894 examinations in all. Infection with *Entamoeba histolytica* was found in 188 instances, with *Entamoeba coli* 505 times, with *Giardia intestinalis* 317 times, with *Chilomastix mesnili* 61 times, and with *Trichomonas intestinalis* 18 times. The authors have started out with the recognition of the fact that the frequency of infection can be arrived at with greater certainty when the search was being made for another parasite. They, therefore, selected 110 cases in which the examination was undertaken for the detection of the *Enta-*

¹ *Annals of Tropical Medicine and Parasitology*, June 30, 1917.

mæba histolytica, and noted the frequency with which *E. coli* and *G. intestinalis* were discovered. Thus, in dealing with the latter, they found that in 19 persons the flagellate was discovered when the stools of each had been examined on an average three times. When the average number of examinations was increased to six, three further infections were discovered, while, at the end of the investigations, 29 infections were detected after an average of 35.6 examinations. A close analysis of the cases led them to calculate the number of infections from the number of instances in which the flagellate was discovered after a large number of examinations. On assuming that the frequency of infection in unselected cases would remain constant, they infer that 60% of all infections are discovered after three examinations, and 80% after six examinations. They found that 30% of all the cases examined were probably infections with *Giardia intestinalis*. In regard to the infections with *Entamoeba coli*, they have estimated that, had the stools of all the persons under their care been exhaustively searched, from 50% to 55% would have been found to contain this parasite. Three examinations brought to light 60% of this estimated number, while six examinations brought to light 78%. They have approached the infections with *Entamoeba histolytica* with more caution, since they admit that the series was not unselected, that is to say, in each case a deliberate search for this parasite was being carried out. In one case it was found for the first time at the thirty-second examination. Three examinations enabled them to recognize from 50% to 57% of the total estimated number of infections and six examinations 65%. They conclude that ultimately from 20% to 23% of all cases should be found to be infected. They therefore advise that the stools of a person suspected to be suffering from dysentery or of carrying *Entamoeba histolytica* should be examined six times. They have no evidence of any advantage of allowing a prolonged interval to intervene between a negative search and the following examination. If these figures can be accepted as representative of the average state of affairs obtaining in an infected area, serious notice should be taken of the fact that, after six thorough searches in 35% of the persons with stools containing it, the parasite remains undetected. The significance of this from the point of view of prophylaxis does not require to be pointed out. Since it is impracticable to require twenty or thirty examinations in each case, when a large number of persons have been exposed to infection, the advisability of subjecting the infected and the uninfected alike to curative measures must be taken into consideration.

HÆMOLYSINS IN HEATED MILK.

The interest revealed within recent times in the distribution and characters of *Bacillus aerogenes capsulatus*, often called *Bacterium welchii*, demands careful attention to all reliable work carried out with this organism. It has long been recognized that milk supplied to the community contains aerobic and anaerobic spore-bearing organisms, which are resistant to heating to 60° C., a temperature sufficient to kill non-

spore bearing bacteria. Apart from the direct or indirect injurious effects of these bacteria, their presence in milk offers an opportunity of study. It has been noted that market milk, after heating, at times undergoes an explosive reaction, which can be traced to the multiplication of *Bacterium welchii*. It is further known that heated milk of this character has the power of hæmolyzing red blood corpuscles. William W. Ford and Joseph H. Lawrence have attacked this problem, and have adduced evidence to show that the hæmolysin of market milk is a bacterial hæmolysin, and is probably called into existence by the gas bacillus.¹ They have started with samples of Baltimore market milk, which they have heated to 85° C. for 15 to 20 minutes, and then incubated for 24 to 48 hours. The milk was found to explode violently, both with and without peptonization. The fluid from this decomposed milk was found to be hæmolytic for the red blood cells of rabbits, guinea-pigs, chickens and pigs. A series of samples were tested bacteriologically. In each case cultures of *Bacterium welchii* were obtained on passage through rabbits. The suspensions of the blood corpuscles did not undergo clear laking, but assumed a dark brown colour, indistinguishable from that of methæmoglobin. It was ascertained that the fluid was acid in reaction. After exact neutralization, the whey effected a typical hæmolysis, yielding a clear, lake-coloured solution of hæmoglobin. Further tests revealed the fact that the hæmolytic agent was disturbed by heating for a half of an hour to 60° C., thus exhibiting a difference between a bacterial hæmolysin and butyric or lactic acids. The authors speak of the destruction of the hæmolysin at this temperature. Whether they are justified in this or not, must be left to further experiments. The experience with the alleged destruction of complement at temperatures of 60° C. and higher would suggest that the disappearance of the hæmolytic action is not caused by destruction of the substance, but is due to a temporary disturbance of its molecular arrangement. Further, they have shown that the hæmolytic power is contained in some substance which is precipitated by alcohol. This may be a protein or some body attached to the protein molecule. The hæmolysis no longer takes place after the whey is treated with pepsin or pancreatin. In other words, the hæmolytic substance is intimately bound up with protein, is transferred to the protein fraction after precipitation with alcohol and disappears on the dissociation of the protein. It, therefore, behaves in a manner characteristic of a bacterial hæmolysin, and is certainly not an attribute of an organic acid, such as lactic acid. They have discovered identical reactions when experimenting with pure milk cultures of *Bacterium welchii*. It now remains to be proved whence this gas bacillus gains an entrance into milk, and what its significance is, both from a pathological and from a physiological point of view.

We regret to announce the death of Dr. William Boake, of Glenferrie Road, Hawthorn, Victoria, which took place on September 25, 1917. Dr. Boake was performing an operation on a child, and was engaged with Dr. William Begg in overcoming some difficulty with the anæsthetic, when he fell across the operating table, dead.

Bulletin of the Johns Hopkins Hospital, August, 1917.

Abstracts from Current Medical Literature.

DERMATOLOGY.

(130) Treatment of Scabies by Sulphur Fumigation.

John Bruce, having to deal with a large number of cases of scabies at the front, instituted treatment by sulphur dioxide gas, by which expeditious means patients were able to return to their units a few hours after exposure to the vapour (*British Journ. Dermat. and Syphilis*, April-June, 1917). The treatment was carried out in a cabinet of a design similarly to those used for Turkish baths, with the seat so constructed as to allow the buttocks to come into direct contact with the fumes. The large sulphur candles supplied by Jeyes give the most satisfactory results, each candle being sufficient for the treatment of ten patients. The sulphur vapour is more potent in the presence of moisture, and in order to obtain this, a small basin of water is placed over the candle, on a tripod. Sweating should be encouraged, and in cold weather it may be necessary to heat the cabinet with a small paraffin stove. Before entering the vapour bath, the patient scrubs himself well with soft or yellow soap in a hot bath for at least five minutes, in order to open the burrows, after which he remains exposed to the sulphur dioxide fumes for forty to fifty minutes. Should this exposure be prolonged, a sulphur dermatitis is liable to be set up, especially around the buttocks. On leaving the cabinet the patient is transferred to the bathroom, where clean, fresh clothing awaits him. It is essential that an orderly should be in attendance, in case unexpected symptoms develop. The clothes must be either disinfected in the cabinet along with the patient, or treated by steam. In the majority of cases one application is sufficient, but should there be any induration, a second application is usually given at the end of 48 hours. A slight, branny desquamation often follows the treatment, but dermatitis due to the sulphur is rare. Following the exposure the pruritus is immediately relieved. The author has treated two hundred cases with 2% of recurrences, which could be attributed to some article of clothing having escaped disinfection.

(131) Multiple Basal-cell Epithelioma of Sweat Gland Origin.

H. G. Adamson describes a case of multiple ulcerating basal-cell epithelioma, with a zoniform distribution, and possibly of sweat gland origin (*British Journ. Dermat. and Syphilis*, April-June, 1917). The patient, *act. 72*, first came to hospital in March, 1916, with an irregular, disc-like patch, of a diameter of 1.87 cm. This was raised

about 0.4 cm., and situated 7.5 cm. above and to the left of the umbilicus. There was a history of four years' duration, and the growth now exhibited an ulcerated, crusted centre, with a narrow, rounded, nodular margin. A diagnosis of rodent ulcer was made, and after a massive dose of X-rays it healed, with a smooth, flat scar. The patient returned five months later, and fresh nodules could then be observed at the margin of the scar, as well as extending upwards and backwards for several centimetres from the site of the original nodules. The growth was composed in all of some thirty-six nodules, raised to a maximum height of 4 millimetres. They were in parts discrete, grouped and coalescent; were smooth, and firm to the touch, and of the colour of the normal skin. The larger nodules were ulcerated, and thinly crusted at their central parts, and had a narrow, nodular margin, suggestive of the "rolled-edge" of rodent ulcer. Histological examination showed the growth to be a basal cell epithelioma, with the cell masses arranged (a) around the mouth of a sweat-duct, (b) around sweat-ducts, (c) around a sweat gland, and this arrangement points perhaps to an epithelioma of sudiparous origin. The grouping of the tumours or nodules recalls that of a linear naevus, and suggests that it may be a dormant linear naevus of sweat gland type, aroused late in the patient's life to active growth, and giving rise to a basal-cell epithelioma of rodent ulcer type. This case may be compared with that of Norman Paul (syringoma), recently published in the *British Journal of Dermatology*, which probably forms a link between Adamson's cases now exhibited and the linear naevi of syringoma type recorded by Peterson and Elliott.

(132) The Skiagraphy of the Pelvic Colon and Rectum.

J. T. Case (*Americ. Journ. Roentg.*, August, 1917) discusses the radiological aspects of pathological conditions affecting the pelvic colon and the rectum. He points out that the skiagraphic findings of this part of the alimentary tract have not yet been standardized, and that there is a definite relation between certain symptoms in the proximal part of the colon and lesions in the terminal 50 cm. of this organ. The anatomy of the pelvic colon, with especial regard to its attachments and flexures, is briefly dealt with. He describes the movements by which the transportation of food takes place in the intestine, the movements of Holzknecht, of Rieder, and of Schwarz. The faecal matter accumulates in the pelvic colon, above the pelvi-rectal flexure, which offers a normal obstruction to the outward passage. The pelvic loop rises as it fills, and the straightening out obliterates this flexure. This gives rise to the obstruction. The rectum is normally empty until just before the act of defaecation. Defaecation normally empties the colon below the splenic flexure, and antiperistalsis is set up in the proximal colon and the right half of the transverse colon after

defaecation, delaying the passage of food and allowing digestive changes to go on. The diagnosis of adhesions in this region is carefully discussed. The colon under normal conditions can expel all the bismuth enema used, but if bound down by adhesions, etc., it fails to empty itself. The point of hindrance can be detected, adhesions localized, etc. In these cases the rectal ampulla is seen to be greatly dilated on the administration of the enema. The author does not enter upon so full a discussion on the skiagraphic appearances of the rectum, as the changes are more accessible to other methods of diagnosis. Rectal distension, rectal constipation, carcinoma, rectal syphilis, and fistula in ano, are dealt with in turn.

(133) The Blood in Cancer Under Roentgenotherapy.

Rollin H. Stevens (*Amer. Journ. Roentg.*, May, 1917) details the effects of X-ray treatment of cancer as regards the blood picture in conjunction with the prognosis and progress of the patient. He reviews the various effects of X-rays on the blood of lower animals, and points out that there is a preliminary decrease, followed by an increase in the lymphocytes. Mice and rats injected with mouse serum and inoculated with mouse tumour showed a marked lymphocytosis just as naturally as immune animals do; but non-immune animals did not. When animals were submitted to X-rays after their immunizing injections, the usual lymphocytic reaction was prevented and the inoculated tumours grew rapidly. The author draws the conclusion that the resistance of heteroplastic graft depends on the activity of the lymphocytes—a warning for great care in the application of X-rays. He refers to the effect of Roentgen rays on the human blood, firstly of normal people exposed constantly to X-rays and then of patients suffering from leukaemia, etc., exposed to it for treatment. He then passes on to his report of eighteen cases of cancer under deep Roentgenotherapy, and draws the following conclusions, which he holds are far from final: (1) Roentgen rays with deep penetration in large doses affect the erythrocytes of human beings, contrary to the experiments on lower animals. (2) Lymphocytes are suppressed or destroyed for the first few days. In favourable cases (of cancer patients) this is followed by a reaction with lymphocytosis between the third and seventh day, which lasts probably till the fourteenth day, or it may stop and reappear more strongly and persistently about the fourteenth day. (3) There is a striking resemblance between the curves of these lymphocytic reactions and those of the opsonic index. He holds that treatment should not be repeated until the reaction disappears. (4) The repetition of the dose should be governed by blood as well as the skin reactions. (5) If lymphocytosis is an indication of immunity, then X-rays may act in two ways in cancer cases, by a generalized immunity and

a local destruction of cancer cells. (6) In hopeless cases there is little or no lymphocytosis following X-ray treatment.

BIOLOGICAL CHEMISTRY.

(134) Substitute for Litmus.

W. M. Clark and H. A. Lubs have suggested the use of dibromorthocresolsulphonphthalein as a substitute for litmus in milk cultures (*Journ. Agricul. Research*, July, 1917). This synthetic dye is a reliable and brilliant indicator for the determination of the concentration of the hydrogen ion in milk, since it is reduced with difficulty by bacterial growth. The authors propose the name "bromocresol purple" for the dye. For most purposes it is used as a 0.04% aqueous solution of the monosodium salt, but, for milk cultures, a stock solution, containing 0.5% of the acid, is suggested. A satisfactory concentration for colouring milk is 0.005% of bromocresol purple, giving an approximate strength of M/10,000. The colour of the milk, after the addition of this quantity of dye, is deep, glaucous gray, while the colour is tea-green after 20 minutes' sterilization at one atmosphere plus pressure. When alkali is formed in the milk, the colour passes through a succession of blue tints. The development of acid produces a yellow coloration. When milk containing litmus is heated, the litmus undergoes temporary reduction, with loss of colour. Reoxydation of the dye is delayed by the layer of cream on the surface, so that a considerable interval of time must elapse before the tubes can be used. Bromocresol purple does not suffer any reduction, and milk tinted with this dye can be used immediately after sterilization. The range of potential of hydrogen ion within which bromocresol purple exhibits changes of colour is well suited to the acidity of milk cultures. The authors believe that the substitute is more advantageous than litmus or azolitmin, since the bromocresol purple is pure, while litmus may contain impurities which alter the reaction of the milk to which it is added. They also point out that the reaction of milk is altered by sterilization and by dilution of the milk. The authors affirm that milk diluted with five volumes of water is less changed in reaction by heating in an autoclave than undiluted milk. Dilution diminishes the "buffer" effect of milk, which makes it a poor medium for detecting the formation of small amounts of acid or alkali by bacteria. The comparative value of litmus and of bromocresol purple was tested with a variety of micro-organisms. It was found that no change in reaction that could be detected with litmus, could not be followed equally well with the substituted dye. In many instances litmus was rendered useless by reduction or destruction, while bromocresol purple continued to act as an indicator of the concentration of the hydrogen ion.

(135) Elimination of Glycuronic Acid.

R. Clogne and N. Flessinger have studied the excretion of glycuronic acid in the urines of normal and sick persons (*C.R. Soc. Biol.*, Paris, December 16, 1917). Recent investigations have shown that glycuronic acid is formed in the liver, and that information as to the activity of the liver may be gained by noting the changes in its excretion. The mixed urine of the 24 hours, passed by the normal person, always contains glycuronic acid. The amount present is greater when much meat is eaten, but is less on a diet of milk or vegetable food. The authors have used the method of Grimbert and Bernier to demonstrate the presence of glycuronic acid. They have noted that the urine in healthy persons is free from glycuronic acid after a fast for five hours. When a fasting person takes a meal, the excretion of glycuronic acid commences during the second hour, is increased until the third hour, and lessens during the fourth hour from taking the food. When a fasting healthy person takes a dose of camphor, the glycuronic acid appears in the urine after two hours and diminishes during the fourth hour. The authors have noted that those suffering from dysentery exhibit a regular excretion of glycuronic acid, with little diminution upon fasting. In severe jaundice, gaseous gangrene with jaundice and bacillary dysentery with acidosis, no elimination of glycuronic acid is observed after a dose of camphor. In cases of abscess of the liver due to amebæ, the elimination of glycuronic acid is greater than usual.

(136) Oxytocic Principle of Pituitary Extracts.

H. S. Adams (*Journ. Biol. Chemistry*, June, 1917) has studied the thermal decomposition of the oxytocic principle found in extracts of the posterior lobe of the hypophysis. The evaluation of these extracts depends on the presence in the extracts of a substance or substances which act in high dilution on the isolated uterus of the guinea-pig. The active substance is usually thermostable, and the methods of manufacture involve boiling to remove coagulable proteins and to effect sterilization. The author has observed that, under certain conditions, this oxytocic action is destroyed by heating. He has studied this destruction in detail to obtain information of the number and nature of the substances present in the extracts. Ordinary chemical methods are not applicable, owing to the minute amount of active substance present. The rate of decomposition, at 100° C., has been followed in the absence of air, the amount of remaining active substance being determined on the isolated uterus by comparison with a standard solution of β -imino-azolyethylamine. The results show that the concentration falls as a logarithmic function of the time, and that the reaction appears to be of the first order. It thus follows that only one substance is undergoing decomposition. It has been objected that the action on the isolated uterus need not

indicate the clinical oxytocic activity. A few observations made with material that has been heated to destroy its action on the isolated uterus, show that this material has lost the power of stimulating the uterus in labour. Some further experiments demonstrate that the oxytocic substance is thermostable when the acidity of the liquid in which it is dissolved, is increased to a sufficient figure.

(137) Adrenalin Test for Pancreatic Insufficiency.

H. R. Decker (*Boston Med. and Surg. Journ.*, June 21, 1917) has instilled adrenalin into the eyes of 500 patients, in the hope of detecting some correlation between dilatation of the pupil and disease of the pancreas. It is known that adrenalin chloride (1 in 1,000) does not induce midriasis in dogs, unless the pancreas has been previously removed. When the pancreatic secretion is allowed to escape through an external fistula, adrenalin does not cause dilatation of the pupil. The hypothesis that widening of the pupil is brought about by adrenalin when the internal secretion of the pancreas is lessened, has been suggested by these observations. The author has placed three drops of a solution of adrenalin chloride (1 in 1,000) in one conjunctival sac, the other eye serving as a control. Five minutes later the instillation has been repeated. Enlargement of the pupil, varying from less than one millimetre to complete pupillary dilatation, has occurred within one hour in 18 of the 500 patients. Only two of the 18 patients suffered from any recognizable disease of the pancreas, one from carcinoma and the other from chronic pancreatitis associated with gallstones. In 12 of the 18 patients, disease of the pancreas could be undoubtedly excluded. The author concludes that the reaction is not pathognomonic of pancreatic disease, and that it is absent in patients in whom pancreatic lesions can be demonstrated by other methods.

(138) Alimentation with Barley.

E. Weill and G. Mouriquand have tested the effects of feeding guinea-pigs upon dry grains of barley and upon the same grains after germination (*C.R. Soc. Biol.*, Paris, January 6, 1917). Pigeons fed on the same dried grains of barley live indefinitely, without showing any nervous changes. If the grains are decorticated, the pigeons die after about a month. If the dried grains are heated to 120° C. for two hours, they will not keep pigeons alive for more than three weeks. Guinea-pigs fed on the dried grains die in about one month. When the barley is heated, the guinea-pigs only survive for three weeks. If the grains of barley are moistened and permitted to germinate for three days before administration to the guinea-pigs, these animals survive for three or four months. These experiments suggest that substances may be formed during germination which are of the nature of food accessory.

THE SYDNEY WATER SUPPLY.

At the meeting of the Royal Society of New South Wales, held in the Society's House, 5 Elizabeth Street, Sydney, upon July 4, 1917, Mr. T. W. Keele, M. Inst. C.E., read a paper on the water supply of Sydney, in which he submitted a scheme for the improvement and amplification of the water supply, by which greater economy and efficiency, and, above all, security of supply, would be attained.

Mr. Keele pointed out that it was necessary to inquire into the rate of increase of the population to be served with water, in order to arrive at a reliable estimate of future requirements. The figures given by the Government Statistician could not be used for determining the number of persons served with water, as the municipal boundaries did not correspond with the limits of the areas to which water was distributed. He used the method practised by the Metropolitan Water Board of ascertaining accurately the number of houses connected with the mains and of allowing five persons for each house. From 1888 to 1908 the population of Sydney, estimated in this way, had increased at the rate of 2% per annum. Since this date the rate of increase had been more rapid, rising to 7% in 1914, and averaging 5% over the eight years. It would be reasonable to assume that a rate of increase of 4% per annum would be experienced during the next 20 years.

The water for the supply of Sydney was derived from a catchment area of 350 square miles, in which the Nepean River took its origin. The water was of good quality, and required no filtration. It was conducted to Prospect Reservoir, a distance of 40 miles, through a conduit, thence to Pott's Hill, a distance of five miles, and from Pott's Hill through pipes underground to the city.

The main portion of the supply, about 62%, was pumped to the higher levels of the city. The principal pumping stations were at Crown Street, on the south side, and at Ryde, on the north side of the harbour. The percentage of the water that had to be pumped had been gradually increasing, until in 1915 it reached 68% of the total. The drop to 62% was probably due to the prohibition of the use of sprinklers consequent on the protracted drought. Since the gravitation limit was 141 feet on the south side, and only 97 feet on the north side of the harbour, Mr. Keele thought that for years to come the percentage pumped would not be reduced in amount.

The complete stoppage of water would be a calamity to the city, and, within a week, an exodus of the population would take place. Recent industrial strikes had forced the citizens of Sydney to consider how a diminution in the supply of coal might affect the supply of water. Further, the whole water supply of the city travelled through one aqueduct situated above ground, where it was subject to interference by any band of lawless men. These two reasons were quite sufficient to cause those interested in the supply of water to consider new means for its better security. Again, the recent protracted drought had shown that the capacity of the reservoirs for storing water was less than was desirable. In September, 1916, there were less than 200 days' supply on a reduced consumption, when the situation was relieved by bountiful rain at a season when there was usually little rain in Sydney. As a result of the protracted drought in 1916, it had been decided to build the dam on the Cordeaux River. Four years would elapse before this new reservoir would be completed. He considered that arrangements should be made to furnish a reserve storage of water sufficient for 600 days. In 1921, on the assumptions that the Cordeaux Dam had been completed, and that the population of Sydney had increased at the rate of 4% per annum, there would be 1,112,000 people consuming 52 gallons daily per head. The daily consumption would then amount to 57,821,000 gallons. Allowing for evaporation and leakage, the total daily loss from the reservoir would amount to 72,000,000 gallons. At any one time there would be stored 587 days' supply of water, if the reservoirs were all full. If extra storage were then provided, the new reservoir would be available in 1925, when the amount of water required per day would be 87,000,000 gallons. These new storage reservoirs would presumably be located on the Avon, and would have a catchment area of 63 square miles. Further supplies of water could be obtained from the Woronora and O'Hare's Creek, by which 9,500 million gal-

lons could be stored by suitable means. If steps were taken to obtain water from these sources at once, and if the Avon Dam was completed by 1925, there would be available a water supply of 60 gallons per head for 1,300,000 people for 623 days.

In future years, it would be possible to obtain a further amount of water from the catchment area by utilizing the Bourke, London and Chain-of-Ponds Reservoirs. By building two dams on the Wingecarribee River a still further amount of water could be obtained. With these extra amounts of water, a water supply capable of meeting the requirements of the population until the year 1937 would be available. The only other sources of supply capable of yielding as large amounts as 80,000,000 daily were the Wollondilly and the Cox Rivers, either singly or combined, as they would be in the Warragamba River. As a dam on the Warragamba River would be situated at too low a level to be connected with the existing system, Mr. Keele recommended a dam on the Wollondilly River. This dam ought to be commenced in 1930, so that water from it would be available in 1937.

Mr. Keele then submitted a scheme to bring the whole of the storage reservoirs on the catchment area under complete control, so as to make full use of the rainfall upon the area, to enable the reservoirs to maintain a constant supply by the present low-level gravitation system to Prospect Reservoir, and to give a constant supply at high pressure for those living in the higher zones of the city and suburbs on both sides of the harbour for the next 30 years. In this way, the present method of pumping water to the higher levels could be avoided. The idea of bringing in the water under pressure through pipes was not a novel one. It was well known that the water was impounded at Cataract at an elevation which would command all the heights likely to be occupied in the vicinity of Sydney. It had been considered, however, that the limited quantity of water did not warrant the expense. He had noted that the levels of sites of the future dams on the Cordeaux, Avon, Bourke, London and Chain-of-Ponds were such that they could all be connected by tunnelling, so that they should drain one into the other, from the highest at the Chain-of-Ponds, with a bed level of 1,710 feet, to Cataract, with a bed level of 800 feet. The water from the Wingecarribee area could be conveyed to the London Reservoir.

The cost of metal was becoming so high that pipes for carrying water would be very expensive. He felt sure that in the Hawkesbury sandstone rock it would be possible, at a reasonable depth, to carry the water through a "pressure tunnel" lined with concrete. It would be possible to place the tunnel under George's River and under the harbour at Ryde, not less than 500 feet below high water level. He advocated a tunnel from Cataract to Bankstown, 27 miles in length. From Bankstown one branch should pass to Crown Street Pumping Station, and the other to Ryde. The main tunnel should deliver 150,000,000 gallons per day to Bankstown, and the branch tunnels should each carry 75,000,000 gallons per day. At the termination of each branch tunnel the water should be taken up a shaft designed to admit of connexion being made at the top with the mains. The water would be delivered under the pressure due to the head at Cataract Reservoir, which would be sufficient to supply the maximum quantity required to Wairoonga on the north side and to Waverley on the south side. He estimated that the main tunnel from Cataract to Bankstown, together with the two branch tunnels, could be completed in five years, if the work was all carried on at the same time, at a total cost of £3,760,000.

The tunnels connecting the reservoirs in the catchment area could be made, from time to time, as they were needed, but those connecting the Cataract, the Cordeaux and the Avon, should be commenced at once, so as to be completed at the same time as the dam, namely, in 1920 and 1924. The total cost of the 20 miles of tunnel on the catchment area would be £1,000,000.

The Woronora scheme would be capable of draining 85 square miles of new country into the existing canals. The works would consist of a ten-mile tunnel and two reservoirs, and could be constructed for £1,360,000. As it was possible that the extra water from this area would be needed in 1923, these works should be commenced immediately.

Mr. Keele quoted figures to show that, by 1942, the cost of these proposals would have been met out of the revenue received by the Metropolitan Board for the supply of water.

During the discussion which took place at the meeting of the Royal Society of New South Wales on August 1, 1917, Mr. J. H. Cardew spoke of the necessity for a better supply of water. He agreed that it was prudent to adopt as high a rate of increase in the population as 4% per annum. He thought that the consumption rate of 63 gallons per head, suggested by Mr. Keele for the year 1937, was too low. He believed that a supply of 80 gallons per capita would not be too large. In New York the authorities were providing 150 gallons per head for the next 25 years. He calculated that the tunnel from Cataract to Bankstown should be 9 ft. 2 in. in diameter, and the branch tunnels, 6 ft., while he thought a 24-inch main, carrying $4\frac{1}{4}$ million gallons daily, could pass from Ryde to Wahroonga. He estimated the cost of the principal tunnel and branches as £4,000,000. The whole scheme of Mr. Keele would cost £7,000,000, on the suppositions that the excavation would be made with compressed air drills and explosives, and that the tunnels would be lined with 12 inches of concrete. If the cutting could be done by machinery, no concrete lining would be needed, and the expenditure would be £1,250,000 less. As he considered Mr. Keele's proposition of great value to the rate-payers of Sydney, he moved:—

That, considering the national importance of Mr. Keele's paper, the Council of the Society should consider the question of personally waiting upon the Acting-Premier and asking for a Royal Commission of enquiry.

Mr. W. Corin wished to raise the question of the possibility of fissures appearing in the walls of the tunnels at the low levels, owing to the pressure on the walls. He had been engaged on a scheme involving a tunnel between Cataract and Cordeaux Reservoirs, for utilizing the water to produce electrical energy at a power station at Broughton's Pass. In this way 16,000,000 units could be supplied for pumping in Sydney, at a cost of 0.35d. per unit. He thought that in comparing the cost of pumping with the cost of supplying water by gravitation, Mr. Keele had used uneconomical sources of power. In this way Mr. Keele's scheme became profitable by 1947. He emphasized the value of the proposal in ensuring permanency of supply, security from interference, purity of the water, and a pressure enabling water to reach the top of the highest buildings.

Mr. E. Statham mentioned that the head waters of George's River were as worthy of consideration as the Cordeaux. A dam would be sufficient to head up the waters of George's River to canal level, and this dam could be easily connected by a cutting or short tunnel, either with Prospect Reservoir or the scheme of Mr. Keele.

Mr. W. Poole thought that the tunnel should not be circular.

Mr. A. D. Ollé seconded the motion moved by Mr. Cardew. The motion was carried.

At a meeting of the Royal Society of New South Wales, held on September 5, 1917, Mr. T. W. Keele replied to the criticisms on his proposal to supply Sydney with water by gravitation. He quite agreed with Mr. Cardew that 80 gallons per head per day should, if possible, be supplied in Sydney; but, unfortunately, they must be content to "cut their coat according to their cloth." For at least seven years they had done nothing to increase the storage of water, and it would strain their resources to the utmost to construct the necessary work during the next twenty years. The question of what should be a sufficient average consumption per day was very debatable. At New York provision had been made for a consumption of 150 gallons per head per day; at Buffalo 250,000,000 gallons were provided for 450,000 persons; at Cincinnati 251,000,000 gallons for 321,000 persons; at Pittsburg 208,000,000 gallons for 325,000 persons; at Chicago 191,000,000 gallons for 2,372,000 persons; and at Philadelphia 191,000,000 gallons for 1,254,000 persons. The consumption per head per day of British towns for domestic purposes ranged from 15 gallons at Birmingham to 34 gallons at Glasgow. Allowing 20 gallons per head for trade purposes, and 15 gallons for public purposes, the average supply of water per head per day in British cities was 60 gallons.

In regard to the size of the tunnels, the method of excavation and lining and the total cost of the work, he still held to his previous opinions, after weighing the criticisms advanced by Mr. Cardew. The experience up to the present with tunnel boring machines had been unsatisfactory, and until a satisfactory machine had been invented, he preferred to use drills and explosives. In connexion with the proposal of Mr. Corin to use the head of pressure to develop electrical power for pumping the water to the higher levels, he thought that the distribution of water by gravitation was superior to that by pumping, even if the power station at Broughton's Pass was connected with a power station at Port Kembla driven by coal.

British Medical Association News.

SCIENTIFIC.

A meeting of the South Australian Branch was held at the House of the Branch, Hindmarsh Square, Adelaide, on July 26, 1917.

Dr. H. Swift exhibited a girl, aged $7\frac{1}{2}$ years, who was suffering from progressive lenticular degeneration (see page 310).

Dr. H. Swift also demonstrated a child, aged 14 months, who was recovering from erythredema. He referred to a communication which he had read at the last Australasian Medical Congress on this subject. The child had been admitted to the Children's Hospital in May, 1917, with redness and swelling of both hands and both feet. It was affected with gastro-enteritis. There was general wasting. The muscles of the whole body were flaccid, and a scattered papular eczema was noted all over the trunk and to some extent on the extremities. The child had been breast-fed for three months. Since then it had been given Arnott's biscuits and Neave's food. It had improved greatly under treatment with calcium lactate and fresh foods.

In the next place Dr. Swift showed the brain of a man who had been admitted to the Adelaide Hospital suffering from *delirium tremens*. Venesection had been performed on account of extreme suffusion. Some hours later it was found that he was paralysed down the left side. On the following day he had marked left-sided hemiplegia, with paralysis of the right facial nerve, right ophthalmoplegia and contracted pupils. His temperature was 38.3° C. A lumbar puncture had been carried out, and some almost pure blood flowed out. He gradually became comatose and died. His blood gave a positive Wassermann reaction. He had contracted syphilis during the Boer War. At the post-mortem examination it was found that there was a comparatively large hemorrhage into the right side of the pons and very extensive extravasation of blood all over the cerebellum and on the cortex of the brain. The vessels were affected with syphilitic arteritis.

Dr. B. Poulton exhibited a large post-peritoneal lymphosarcoma. The tumour had been regarded as an inoperable one, owing to its close relation to the celiac axis and other vessels. It had flattened out the head of the pancreas and had occluded the common bile duct.

Dr. Poulton also showed a large papilloma of the rectum from a woman aged 32 years. The growth had been present for two years, and had caused prolapse of the rectum.

The following have been nominated for election as members of the New South Wales Branch:—

Arthur William Gerdon, L.R.C.P., Lond.; M.R.C.S., Eng., 1899, Auburn, New South Wales.
Hamilton Spier Kirkland, M.B., Ch.M., 1917, Univ. Sydney, Sydney Hospital, Sydney.

CONTRACT PRACTICE IN VICTORIA.

Points in Organization.

I.

Individual or Collective Bargaining.

During the organizing tours undertaken by members of the Council of the Victorian Branch of the British Medical Association, some doctors have remarked that they are on

the friendliest terms with their lodge patients, and that some of the lodge members on their lists are their personal friends. These doctors are averse to asking the wealthy members who have grown up in the lodges, to go off their lists. They fear that they might be ostracized in their districts, if they resigned their lodge appointments.

While the great majority of medical practitioners have raised no objection at all to the proposals of the Council, it is felt that these statements demand a reply. Lodge practice in the State of Victoria is at present by no means uniform. In certain districts the lodge secretaries sought an opportunity of obtaining the services of medical practitioners who, owing to the lack of support from their colleagues, were prepared to accept almost any terms they could get. In many cases the original lodge surgeon was followed by a practitioner who accepted the same terms as his predecessor, on the understanding that these terms were customary. Only a few men were bold enough to challenge the officials and to insist on a satisfactory agreement. In the city of Melbourne, lodge secretaries approached medical practitioners some 30 or 40 years ago, and induced them to attend patients at 17s. a year. As soon as the lodge embraced a few hundred patients, another medical man would be offered an increased amount at the lower rate of 16s. The bait was tempting to some of the less thoughtful doctors, and was accepted. This method worked well for the lodges as the number of their members grew, but the medical practitioner found that the rate at which he was required to work sank to 15s. or 14s., and in certain districts as low as 12s. 6d.

It will thus be seen that the lodge secretaries traded on the individual competition of medical practitioners. The weakness of the position of doctors bargaining individually gave the employer his chance, and, like other employers, he seized it for the purpose of obtaining services at gradually decreasing rates. While this commercial method of fixing prices has resulted from the weakness of the individual man, it must be patent to the wealthier lodge members, who claim to be the friends of their lodge surgeon, that they have taken advantage of an undesirable principle, and are benefitting by individual bargaining at the expense of their alleged friend. Unless their protestations of friendship are vain and empty, they will be the strongest supporters of the doctors in their claim to introduce the Common Form of Agreement.

It must be clearly understood that nobody will be required to go off the lists under the Common Form of Agreement. A prominent citizen with ample means who is on the list of any lodge surgeon on November 1, 1917, will have the right to remain a lodge patient until he dies. He will not be required to pay more than £1 a year for medical attendance. This means that the personal friends of any lodge surgeon will continue to call upon the latter, but will do so under the conditions set out in the Common Form of Agreement. Since the insistence on the new terms of contract between medical officer and lodge patients will not deprive any wealthy storekeeper or Senator of the privileges of receiving medical attendance at a very low rate, those who fear social ostracism are likely to be agreeably disappointed.

Since the need for uniform action on the part of the doctors is urgent, it is highly advisable that members of the medical profession should avoid entering into an argument with lodge members, lodge secretaries or with the local bush lawyer. Arguments of this nature would inevitably lead to fresh misrepresentations and fresh difficulties for the individual practitioners. It is wiser and easier for each lodge medical officer to take the attitude that the Council of the Victorian Branch of the British Medical Association, as well as the Councils of the other Branches, have determined that there must be uniformity in the conditions of lodge practice, and that every member of the British Medical Association is required to fall into line with his colleagues, by doing as he is bidden. There is no need for anyone to discuss the principles of the change involved by the introduction of the Common Form of Agreement. The avoidance of expressions of personal opinions and of arguments in favour of an organized effort to secure reasonable conditions of service, will have the effect of preventing personal quarrels with lodge patients.

The day of individual bargaining has passed. The conditions of medical practice can only be rendered satisfactory through united action and wise counsels.

Naval and Military.

The 340th list of casualties sustained by Australian troops was issued on October 4, 1917. The total number of names contained was 890, including 33 officers, one chaplain and 856 rank and file. The total number of dead from all causes was 403, of the wounded was 213, and of sick was 210. Among those ill in hospital are Lieutenant-Colonel Arthur Lacey Dawson and Captain Henry Cyril Adams.

According to an announcement in the daily press, a number of officers have been mentioned for specially meritorious services in Australia in connexion with the war. The list includes the name of General R. H. J. Fetherston, Director-General of Medical Services. It is especially gratifying to note that the services of the medical man chosen to organize and administer the Army Medical Corps in the Commonwealth, should be appreciated.

The following extracts from the *London Gazette* have been published, *inter alia*, in the *Commonwealth of Australia Gazette* of October 4, 1917:—

Decorations Conferred by the President of the French Republic.

Croix de Guerre.

Major Herbert Henry Woollard, Army Medical Corps.

War Office, 1st June, 1917.

The following is in continuation of Sir Douglas Haig's despatch of 9th April, submitting names deserving of special mention, published in the *London Gazette* of Tuesday, 15th May, 1917:—

Australian Imperial Force Staff.

Barber, Colonel G. W., D.S.O., Army Medical Corps.

Hearne, Lieutenant-Colonel W. W., Army Medical Corps.

Huxtable, Lieutenant-Colonel (temporary Colonel) R. B., Army Medical Corps.

Jeffries, Major L. W., D.S.O., Army Medical Corps.

Nicholas, Major J. J., Army Medical Corps.

Sutton, Colonel A., C.M.G., Army Medical Corps.

Army Medical Corps.

Barton, Major A. S. D.

Butler, Lieutenant-Colonel H. N.

Byrne, Major G. C.

Corbin, Lieutenant-Colonel J.

De Crespigny, Lieutenant-Colonel C. T.

Holmes, Captain M. J.

Howse, Captain (temporary Major) A. O.

Kenny, Major J. P.

Kirkwood, Captain N. E. B.

Lind, Major E. F.

Macartney, Major G. W.

McCusker, Captain J.

Macintosh, Major C. L. S.

Morgan, Captain I.

Powell, Captain A. H.

Railton, Captain S. A.

Roth, Colonel R. E., D.S.O., V.D.

Stacy, Lieutenant-Colonel H. S.

Teague, Captain H. O. (killed).

Tebbutt, Lieutenant-Colonel A. H.

Thompson, Major C. W., M.C.

Walsh, Major R. W. W.

Welch, Major H. L. St. V.

Willcocks, Captain G. C.

Williams, Lieutenant-Colonel M. L. (died of wounds).

Wilson, Major A. M.

Birthday Honours.

The records are given of the birthday honours awarded to Colonel Reuter Emerick Roth, D.S.O., Colonel Reginald Geoffrey Millard, Lieutenant-Colonel Harry Nairn Butler, Major George Edwards Cole, Lieutenant-Colonel (temporary Colonel) Constantine Trent Champion de Crespigny, Major William Angus Fraser, Lieutenant-Colonel

(temporary Colonel) Robert Beveridge Huxtable, Major Cyril Leslie Stewart Macintosh, Captain Arthur Hunter Powell, Lieutenant-Colonel Arthur Hamilton Tebbutt, Major Roy William Whiston Walsh, Major Herbert Locksley St. Vincent Welch, Captain Hugh William Fancourt Mitchell, Captain George Seabourne Robinson, Captain Charles Trevor Turner and Captain Frederick Lawrence Wall. We have already published notices of these awards.

In the same *Gazette* are published the records of the awarding of Military Crosses to the late Captain William Robert Aspinall (see *The Medical Journal of Australia*, August 18, 1917, page 153), to the late Captain Ronald Lennox Henderson (see page 147), to the late Captain William Duncan Kirkland (see page 147), and to Captain Hugh Alexander Wylie (see page 147).

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the fortnight ending September 29, 1917:—

	Metropolitan District. Cs. Dths.	Hunter River Combined District. Cs. Dths.	Rest of State. Cs. Dths.	Total. Cs. Dths.
Enteric Fever ..	10 0 ..	0 0 ..	6 2 ..	16 2
Scarlatina ..	21 0 ..	2 0 ..	19 1 ..	42 1
Diphtheria ..	66 1 ..	3 0 ..	55 4 ..	124 5
C'bro-spinal Men- ingitis ..	2 2 ..	1 1 ..	1 0 ..	4 3
*Pulmonary Tuber- culosis ..	53 12 ..	1 0 ..	0 0 ..	54 12

*Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

Three cases of variola have been notified from Cessnock.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the fortnight ending September 30, 1917:—

	Metro- politan. Cs. Dths.	Rest of State. Cs. Dths.	Total. Cs. Dths.
Diphtheria ..	85 1 ..	40 1 ..	125 2
Scarlatina ..	64 0 ..	35 0 ..	99 0
Enteric Fever ..	0 0 ..	4 1 ..	4 1
Pulmonary Tuberculosis	45 23 ..	23 11 ..	68 34
Cerebro - spinal Menin- gitis ..	4 — ..	1 — ..	5 —
Poliomyelitis ..	0 — ..	1 — ..	1 —

QUEENSLAND.

The following notifications have been received by the Department of Public Health Queensland, during the fortnight ending September 29, 1917:—

Disease.	No. of Cases.
Diphtheria ..	49
Pulmonary Tuberculosis ..	30
Enteric Fever ..	7
Cerebro-spinal Meningitis ..	6
Scarlatina ..	9
Erysipelas ..	3
Puerperal Fever ..	1
Malaria ..	1
Ankylostomiasis ..	1

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, for the fortnight ending September 29, 1917:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Diphtheria ..	5 ..	6 ..	14 ..	25
Pulmonary Tuberculosis	4 ..	0 ..	7 ..	11
Enteric Fever ..	0 ..	0 ..	4 ..	4
Cerebro-spinal Menin- gitis ..	0 ..	0 ..	2 ..	2
Scarlatina ..	0 ..	0 ..	1 ..	1

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, for the week ending August 22, 1917:—

	Adelaide. Cs. Dths.	Rest of State. Cs. Dths.	Totals. Cs. Dths.
Diphtheria ..	4 0 ..	17 0 ..	21 0
Pulmonary Tuberculosis	0 2 ..	5 4 ..	5 6
Erysipelas ..	1 0 ..	4 0 ..	5 0
Scarlatina ..	1 0 ..	3 0 ..	4 0
Favus ..	0 0 ..	3 0 ..	3 0
Puerperal Fever ..	0 0 ..	2 0 ..	2 0
Morbili ..	0 0 ..	1 0 ..	1 0
Enteric Fever ..	1 0 ..	0 0 ..	1 0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending September 8, 1917:—

	Metro- politan. Cases.	Rest of State. Cases.	Totals. Cases.
Diphtheria ..	8 ..	1 ..	9
Scarlatina ..	2 ..	1 ..	3
Pulmonary Tuberculosis	5 ..	1 ..	6
Erysipelas ..	2 ..	0 ..	2
Septicæmia ..	2 ..	0 ..	2

NEW ZEALAND.

The following notifications have been received by the Chief Health Officer, Department of Public Health, Hospitals and Charitable Aid, New Zealand, for the four weeks ending August 20, 1917:—

Disease.	No. of Cases.
Scarlatina ..	317
Diphtheria ..	533
Enteric Fever ..	57
Pulmonary Tuberculosis	117
Cerebro-Spinal Meningitis	2
Poliomyelitis ..	2
Puerperal Fever ..	5
Erysipelas ..	5
Hydatids ..	2
Ophthalmia Neonatorum	1
Septicæmia ..	12

Obituary.

THEODOR KOCHER.

An exhaustive notice of the career and achievements of the late Professor Theodor Kocher, of Berne, would occupy more than a whole issue of this Journal. To attempt it in a summarized fashion would be futile. Fortunately, his fame has reached to the corners of the earth, and every student of surgery has become aware of his methods and teaching, though many may perhaps fail to attribute these methods and doctrines with the man. He was 76 years of age at the time of his death two months ago. He was born in Berne in Switzerland and singled himself out from among his fellows at a very early age as a man of original thought and unusual ability. At the age of 31 years he was elected Professor of Surgery at the University of Berne, and he held this position for 45 years. He started to influence surgery soon after Lister had introduced antiseptics, and Kocher was one of the first surgeons to make full use of the new doctrine, which was to revolutionize surgery. His methods were devised as a result of work undertaken together with Tavel. As an operating surgeon he was deliberate, exact and essentially skilful. There was no dramatic brilliance about his operations, but since he rarely took up a knife without having informed himself minutely and accurately of the pathological changes needing removal or repair, each step of his operations was purposeful and necessary. He was not a great scientist; but his knowledge of physiology enabled him to be a reliable diagnostician and the most many-sided surgeon of his time. His fertile brain devised innumerable methods. For example, it was his ingenuity which gave rise to the rational mode

of reducing dislocations. Of all the branches of surgery, that associated with the thyroid gland appeared to attract his attention most strongly. Few if any men have had such opportunities as he had of building up a great experience of one operation, and none have made better use of their opportunities. In 1901 he recorded in the most fascinating manner the results and lessons to be derived from his second thousand operations for goitre. Since that time he has added a large number of further operations. In 1905 he occupied the position of President at the first International Congress of Surgery, which was held at Brussels, a Congress which was better planned and better managed than any other during the past twenty years. His reputation in England was great, and at the last International Congress of Medicine, held in London in 1913, he was an honoured guest.

Dr. MacLaurin, of Sydney, writes:—

"I first saw Kocher in 1910, at Horsley's operating clinic in London. The theatre was arranged thuswise: the operation, of course, took place in the middle of the arena, and the spectators had to stand, garbed in white overalls, on a platform whence tall and burly men might perhaps succeed in gaining a fleeting view. Being personally known to Horsley I was given a stance in the front row, with various large men on either side and behind me, and, as I looked around, I saw a small and extremely neat, grey-haired man vainly endeavouring, from the back row, to catch a glimpse of what was toward in the arena. No one knew him; each person fought for his own view; and the little man could see nothing. At this moment Horsley looked up—I think someone had coughed, a deed of evil which always roused his extremest wrath. 'Why, Kocher,' he said, 'are you in London? Come forward. Please make way for Professor Kocher, gentlemen.' At the sound of that great name, I need not say that room was immediately made, and the small neat man, protesting *sotto voce*, was pushed unwillingly to the front.

"After the operations Horsley asked me into the side-room to meet Kocher over a cup of tea, and thus I began the privilege of friendship with two of the foremost scientific men of the day. Kocher was then about 70 years of age, but extraordinarily acute in mind and strong, though small of body. There was an air of gentleness and modesty about him which struck us all as being particularly remarkable in a man who exercised such an immense influence over his contemporaries; he was refined in every way; very dapper in his dress, and took extreme care of his hands. He spoke English with a strong German accent, but had good command over the language, and his voice was even then not the voice of an old man. I saw a great deal of him during the next week, during which the British Medical Association had arranged a round of festivities for visiting members. Kocher had a peculiarly gentle wit which was rather attractive. One evening we were at dinner with Butlin, and Kocher turned out to be a strict teetotaler. Someone immediately chaffed him about his fondness for alcohol as an antiseptic; whereupon he answered, with his softest deprecatory smile, 'Yes, alcohol is ver' goot for der handts, bot ver' bad for der coats of der stomach!' He told us of his ordinary day's routine. He rose at 6 in the morning, and worked in the dissecting room till 8, when he had a light breakfast. He then worked at his public hospital till 1 o'clock, when he had lunch, and immediately afterwards he started his private operations; after these were finished he worked at his records, saw his patients, had supper, worked again till 11, and then to bed. 'But, Professor,' someone said, 'do you take no recreation at all?' 'Ach, yes,' he answered, 'On Sundays I play at der lawn tennis.' The thought of the mighty Kocher capering about a tennis-court tickled most men's fancy that evening.

"Horsley invited Mrs. MacLaurin and me to go motoring with Kocher and his son Albert, and took us for nearly a week over the West of England. That week in such company is, of course, a landmark in my memory. Kocher talked quite openly and freely about all the leading surgeons of Europe; he knew everyone, and his criticisms were invariably, so far as I was able to test them, both keen and correct. I doubt if he really understood that he was supposed to be taking a holiday, because as he travelled through the most exquisite country in the whole world he lay back persistently in his cushions, wrapped up to the

nose in a great fur rug, with his eyes fixed unseeing on the car-body in front of him. 'A penny for your thoughts, Professor,' we asked him. 'I was just t'inking of a new way to X-ray der thyroidt,' he said, when he woke up to the fact that someone was speaking to him.

"It is sad to think that the two greatest minds of that party, minds among the most brilliant that have ever graced the profession of medicine, are now for ever gone from this world.

"I cannot describe the extraordinary reverence with which Kocher was treated by everyone whom he met in London. Even the scintillating and masterful Horsley seemed to look up to him as though to his father. One day when a sudden shower had come on and the air turned very cold, he insisted on Kocher's putting on Horsley's special water-proof coat, and when the old man protested, Horsley said, 'You must do as you are told, Professor—there is only one Kocher in the world.' And that, I think, represented the general attitude of everyone. He was extremely gentle, self-effacing, and modest; he hated to be fussed over; and yet one could not help feeling in his presence that there was a wisdom and greatness within him that fall to the lot of very few men in a generation. So far as I am concerned I freely confess that no other man has ever made the impression on me that he did—that little grey-haired surgeon from Switzerland.

"The influence of Kocher on surgery is so overwhelming that it can never be forgotten, and it is not too much to say that the whole of modern operative surgery rests on the foundation of his work. Leaving out Lister, whose antiseptic system of course made all operations possible, and whom we must undoubtedly put at the head at our profession, I can recall no man whose work, either for profound originality, practicability, or vastness of range, can compare with the work of Theodor Kocher. He seems to have systematized everything; to have explored the recesses and possibilities of every region. He has either revolutionized, or done profoundly original work, on the surgery of the brain and skull, the spine, the joints, stomach and intestines, hernia, cancer, skin-incisions, and goitre. Whenever one is faced with a strange problem, after reading what other authorities have had to say on the subject, he turns to the words of Kocher, and there he finds leadership, profound anatomical knowledge, and above all strength and wisdom; and so it is that 'Kocher's methods' are a synonym for all that is true and valuable in surgery.

"I suppose he had finished his original work; few men do much after seventy; but with his final departure from mankind I think that all of us must feel a strong sense of personal loss. I believe we may look on him as the greatest surgeon of history; it only remains for us now to try and follow his example of care and faithful self-criticism. Few of us are likely to equal his originality and his wisdom."

THE LATE CAPTAIN W. R. ASPINALL

The following details have been received from Captain Eric Aspinall concerning the death of his brother:—

"It appears that he had only been 'in the line' again for two days. The position was particularly hot; but they say Bob was absolutely fearless, and whenever there were any casualties he never hesitated. On July 20 one of the sergeants was wounded. Bob and his orderly went out to dress him, when a shell burst close by and everyone was killed. Poor old Bob was killed by a splinter of shell which went right through his heart; death was instantaneous. . . .

"The last time I saw him was in April, and he had just returned from leave, and was much put out because they were going to keep him at the waggon lines; but eventually he worked his way up to the line again. It was there that he received his Military Cross. From what I can hear, the Germans came through on a big raid, and our fellows fell back temporarily, but Bob did not go back; he worked his way on to one of the flanks, and found a machine-gun crew with one wounded man and waited with them until the infantry advanced again. He then attached himself to the infantry and went forward with them. I believe he was the only medical man that far up. He was buried at Reninghelst, in Belgium, in the Military Cemetery."

Major Geoffrey McLaughlin, of — F.A. Battery, has also written on the same subject:—

"He was quartered with me, as we had two other batteries alongside. We had been up all night, as we were heavily shelled all the time. About 11 a.m. they started again. Bob just came in and told me one man had a nasty crack in the arm, and that he would say who he was in a minute; he was just sending him away. As he walked along a bit the shells dropped closer, and he went to a man that was hit, and the next shell fell in the same place. He was killed instantly. I could not really, if I tried, tell you how all the Brigade loved him, or the way he looked after them always. He was always without fear for himself, if there was anything he could do. That must be a satisfaction to you all to know that people here feel almost the same as you must, and miss him as the best friend the Brigade had. He had said to me a couple of minutes before, 'By Jove, I'll have to bite off a bit of sleep somehow.'"

THE REMUNERATION OF THE RECRUITING DOCTOR.

The War Office has discovered that some civilian practitioners who are daily engaged in examining recruits for the Army have been making too much money, and steps are being taken to cut down their rates of remuneration. The scale and system of payment have varied in different districts, but in some places the doctor has hitherto been receiving half-a-crown per recruit examined.

In future, however, this payment is to be abolished, except in the case of a doctor who examines only three or four men daily.

Contracts are to be entered into between the medical man and the recruiting authorities providing for a standard rate of pay per day, three-quarters of a day, or half a day, as the case may be.

Six working hours are officially regarded as the doctor's day, and for the full time he is to receive a fee of £2. He must, however, earn it, for it is provided that he examines at least thirty recruits.

These thirty examinations, at the old rate of pay, would work out at nearly £4.

In future, if a civilian medical man is employed at the work three-quarters of a day—four hours and a half—he receives £1 10s., providing he examines at least twenty recruits. For half-a-day—three hours—the pay is £1, and the minimum number of recruits ten. For quarter of a day the minimum number is five, and the rate of pay ten shillings.

Correspondence.

THE MEDICAL PROFESSION AND THE LODGES.

Sir,—The letters in your columns recently on the present position of lodge surgeons in Victoria are of interest to those of us in New South Wales who experienced the same doubts as to the practical financial results which (apart from all ethical questions) are really the stumbling-block in most cases in improvements attempted for our material welfare, and which loomed large in all our minds before January, 1914, when the Model Lodge Agreement came into force here in this State.

It is to be sincerely hoped that our Victorian colleagues will profit by the success gained to refuse absolutely to entertain any modifications of the Common Form, which should be the minimum basis of negotiations, and I would appeal most strongly to the Victorian members to fight for the retention of the "Income Clause" or wage-limit clause, which is the king-pin of the whole agreement.

It is with the idea of strengthening and bracing up their resolution to take resolute, united action at this so perfect a tactical juncture, that it may be of interest to those "Doubting Thomases" whose letters we have read

in the *Journal*, to narrate the experience gained in one particular town in New South Wales, where the writer practises, and doubtless the methods utilized by the medical men here may be improved upon and perhaps serve as a working basis, and may at the same time show the futility of some of the suggested alternatives.

The *mise en scene* of this long, protracted contest (for so it proved to be, lasting 3¼ years) was in a country town of about a population of 10,000 people served by six (*post bellum* five) men, whose united lodge income was about £1,300 per annum.

Local bellicose operations were initiated by many meetings and conciliatory attempts and proposals of modifications of the agreement and arbitration and all the various suggestions of your correspondent, but the bitterness displayed by the lodges rendered them abortive; at these meetings it was laid down and clearly conceded by our opponents that our demands were not in the nature of a strike, and that we were always willing to treat our former patients, either as private ones and, if necessitous, in hospital gratuitously, it being the conditions under which we then worked, to which objection was taken. The lodges (with the exception of one small one) contemptuously rejected the Model Agreement, imported two new men and opened their own dispensary. During the three years and a quarter the conflict lasted, six men in all were introduced into the town, the longest surviving nine months, the shortest three days, all of whom had been "misfits" in the professional arena. At the end of that period, with their numbers diminished to less than half, the leaders, being at the end of their finances, and the war preventing any further men being obtained, had to come to ask, in all humility, that we take them back under the Model Agreement.

Financially, our experience was that the better class and more reconcilable former patient came as a private one, and from that minority it was only then realized what an immense amount of underpaid and sweating work had been enacted formerly; the sum total was that in the first year we lost little or no income, whilst in the following years, when more and more dissatisfaction ensued with the constant changes in men and the many periods of interregnum, during which the lodges agreed to pay from their funds private fees of members attended, our incomes slightly increased, as well as the freedom from frivolous calls and the constant annoying feeling of being exploited by fairly well-to-do patients.

The local hospital work was slightly increased, as the newcomers naturally pushed everything acute on to us. At the first, owing to popular outcry of the lodges and the peculiar rules of the hospital, we passively had to allow the election of two newcomers, when we resigned at once in a body, and waited events, which, in six weeks came to a head, owing to inability to treat a very ordinary urgent case, when, in parliamentary parlance, "they were withdrawn by mutual consent"—they called it resigning, whilst the committee stigmatized it by another name—and the former medical officers were again elected.

At the end of the—to us—passive conflict, as a condition of signing the Model Agreement, certain additional local conditions were imposed, which included the closing of the lodge dispensary and our right of re-examination, under which clause certain of older well-to-do patients—15 had motor-cars—were eliminated. The small loyal lodge was of service during the conflict for suitable lodge discontents to be recommended to join after resignation from their old one.

The chemists, who do the present dispensing, combined to put up the former rate of 6s. to 14s., and now each member pays £2 per annum, i.e., 26s. to medical officers, and after six months' trial, it can be said that the Common Form Agreement works well and smoothly to both sides, and our professional life is now far pleasanter.

This narrative is intended to give heart to any that may be inclined among the Victorians to waver and to show how united action, even for a longer period than could possibly now continue (owing to the war scarcity), has led in the end ultimately to success, without any marked diminution in professional earnings.

Yours, etc.,

L. ROBERTS.

September 30, 1917.

Sir,—An important point which I have not seen mentioned in the correspondence on this matter is the position of dependants of lodge members on active service. When these men went away they were parties to the present agreement; their views cannot be heard, and it would be wrong that their dependants should suffer through the resignation of lodge medical officers.

It was, I believe, agreed that dependants of soldiers should be treated free, if necessary; this rule, in the event of an interval elapsing between the date of resignation and the signing of the Common Form of Agreement, should apply to lodge members who have enlisted, and this should be made clear to the lodges, otherwise the medical profession in Victoria will lay itself open to grave reproach.

Yours, etc.,

F. R. LEGGE.

Swan Hill, Victoria,
October 3, 1917.

SHORTAGE OF MEDICAL PRACTITIONERS.

Sir,—In reference to your article of September 29, entitled "The Value of Anticipation," you discuss the shortage of medical officers and give two instances to demonstrate this. The first place mentioned, Broken Hill Hospital, has had the services of an assistant medical officer for the last twelve months, until he obtained a position on a transport (for which, by the way, there were at least two other applicants). After his departure there were another couple of applicants for the vacated position.

The second instance, Camooweal, has always had, and probably always will have, difficulty in obtaining a reliable man at the salary offered, and it can hardly be taken as a criterion, but if it were situated within a few miles of a capital city there would be quite a number of applicants. Three months ago applications were called for an Egyptian Hospital; there were eight applicants from South Australia alone, one only being required from this State. It appears to me unwise for the press (lay and medical) to be always talking of the shortage of doctors, as more students than are normally required will enter the profession, thinking they will tap a gold-mine, whereas, when the war is over, the consensus of opinion is that there will be a surplus of medical men, which, of course, will suit our friends, the lodges. I understand there are 180 students doing first year in Melbourne; I should think about 90 of these would be doing more benefit to the Empire if they were studying medicine as privates in a field ambulance, and so save men being taken from the infantry for Army Medical Corps reinforcements.

Yours, etc.,

M. D. NESBITT.

Mitcham, S.A., October 2, 1917.

THE REFERENDUM.

Sir,—You say "these 1,011 men will not be satisfied to leave the matter where it is." Well, neither will the other side be satisfied to allow it to proceed further. For they are not going to allow the exponents of brute force and Prussianism to consummate their intrigues against liberty under the guise of patriotism, etc., nor allow the war to be exploited in the interests of plunder and to crush labour. Freedom can never be indebted to its worst enemy and menace—militarism and what it represents. The only decent thing those of your side, who have not gone or volunteered, can do would be to offer themselves. Surely these noble patriots are not going to eagerly avail themselves of the palpable excuse of not going because the "shirkers" remain, otherwise their protestations about danger to the Empire, their colleagues and liberty, etc., must be, as many are satisfied, pretty insincere. But these militarists are not going to be allowed to force others to or to do their sweet will or pay the piper whilst they call the tune. Liberty is the negation of force; therefore, the exponents of force are its enemies, and consequently cannot be its upholders. The militarists (of all countries), who are alone responsible for all wars, must be made to pay for and fight them out themselves; whether non-militarists join in is entirely a

matter for themselves to decide. The criminals who call the tune must at least be all made to pay the piper and not allowed to force someone else to contribute to, or pay for, their crimes, seeing that many of them go free, and, or in order to, gain thereby. If the one side wishes for the co-operation of the other, instead of, as at present, alienating it, it must change its real objections and actions, which give ground for more than just suspicions, and put an end to the mendacity, misrepresentation, corruption, hypocrisy and imposition of the governing, capitalistic and privileged classes. In a word, prove, instead of asserting, its *bona fides*.

As for those contemptible imposters, the real shirkers, those depraved he- and she-males, who, being or thinking themselves immune, are prepared to and do vote away someone else's liberty and life, the only right thing to do with such poltroons would be to pack them off to the front. A country has descended pretty low where this kind of thing is tolerated. These, the shirkers, the exempt brigade, the win-the-war and patriotic gas-bags, the over-the-age, button-buying and unfit heroes, the profiteers, food exploiters, petticoat husbands, the would-to-God stalwarts, etc., for these repulsive creatures, most of whom voted "yes," no punishment could be too severe. It is certain no honourable citizen would lend himself to such sharp practices and infamies. Even a Hun, low as he is, takes the risks he asks of others.

It has been said that these degenerate, exempt "yes" voters are anxious that the young men, who are allowing themselves to be imposed on to carry practically the whole burden of the war, should be sent away, so that they can enrich themselves by their absence; hence their vote. I can quite believe it. It is going on all around us—robbery, exploitation, profiteering, food cornering and general fraud by the patriotic adventurers and hypocrites, who willingly sacrifice nothing, unless it be someone else.

If your friends want to go, they can go; but they are not going to force others by establishing Prussianism, and thus make the war a sham and farce. Liberty can only win this war by voluntarism and the supremacy of the civil power. For voluntarism can and will "give" all and more than compulsion, when and only when equality of sacrifice is genuinely and universally applied and the grounds for mistrust removed. If we remember what it has done under frightfully discouraging, what will it not do under encouraging, conditions. Then it will be worth while.

Yours, etc.,

G. S. THOMPSON.

October 1, 1917.

THE PREVENTION AND SPREAD OF TUBERCULOSIS.

Sir,—Some time ago I had charge of the men's wards at Waterfall Government Hospital for about seven weeks, I took a careful history of 34 admissions just as they came. Those histories I checked the next day or so by cross-examination. Making an analysis to bring out the special points I was curious about, I obtained the following figures, which, with the exception of those relating to pleurisy which are rather high, represent, I think, fairly the average:—

Thirty-four Cases.

Patients with single pleurisy as first sign (1 hospital case)	6
Warned as to danger of phthisis	2
Patients with single hæmoptysis as first sign (1 hospital case)	4
Advised as to proper sanatorium or dispensary treatment	0
Patients' average time under medical treatment with sputum untested and no precautions advised, 19 weeks (2 hospital)	15
Number of these where the doctor must have known of presence of tubercle bacilli	11

The treatment of pulmonary tuberculosis in private has always been a reproach to the profession, and indeed in institutions is nothing to boast about. The main "thing," however, I wish to draw attention to is the extraordinary and inexcusable casualness prevalent in regard to the prevention of the spread of this disease. The same thing

exists more or less in the case of other complaints, and will continue to do so until more attention is paid to the fence at the top of the cliff than the ambulance at the bottom. Until the ideal of compulsory segregation is achieved, is it not high time that a course of systematic tuberculosis training were included in the curriculum?

Yours, etc.,

F. H. L.

POST-GRADUATE COURSES.

Sir,—The question of post-graduate courses, which has had some prominence in your pages of late, seems to me to be bound up in the more fundamental question of organization of the profession. The real stumbling-block in the way of any scheme of post-graduate instruction is that the men who most need such instruction—the hardened sinners of big lodge practice—cannot afford the time that is necessary for an adequate course. The only way these men can get the necessary time is by the development of some sort of co-operation. The tendency towards a degree of nationalization of the profession is the direct, if diluted, outcome of the ideas of State socialism, with all its machinery of bureaucracy; something of this nature is surely going to be forced on us, in spite of what the old hands say. Probably this nationalization will be grafted on the present contract system, retaining all its slavery and more.

I propose a counterblast; the idea of guild socialism, whose basic principle is that every industry shall be controlled by and for those who work in it.

The present "private" relationship of patient and practitioner is doomed to extinction; and a good thing too. Don't we all find it easier to do our best work in public hospitals, where we are free to say: "This the best; this you must have?" It is time we stopped trading on the humbugging confidence of patients in particular doctors, which, of course, private practice depends on. In hospitals, patients are quite content, as a rule, to submit to the tender mercies of whatever hands are laid on them. I labour this point, because on it hangs the hope of raising the profession to a position to real dignity.

I look then to the day, the day when politicians will ask us to be their servants, the day when we shall reply: "We refuse your slavery. Our dignity demands that we should care for the health of the community to the best of our ability, regardless of the status of our patients. Grant us so many million pounds per annum, and we undertake to keep the community as healthy as possible. Of how we are to do that, we are the best judges."

At present, the best methods would seem to be extension of hospitals, division of districts into wards, under the combined supervision of a "house" surgeon, physician and two obstetricians (alternate night and day), with an adequate staff of nurses and clerks. There is little fear of back-stair influence in such a guild; any fool can humbug the laity, but he is diabolically clever who fools his brother practitioner. In such a guild the position of honour shall be that of the teacher—the guide of those entering the profession and the chastisement of my mutual friend, the "hardened sinner." Then, and then only, shall we have a real post-graduate training.

Yours, etc.,

STEWART MACKY.

North Fitzroy.

September 23, 1917.

CIRCUMCISION IN INFANTS.

Sir,—Kindly allow space in the *Journal* for a few remarks on this subject. Nowadays it has become a surgical fashion to advocate circumcision in every male infant. Is it really necessity, or is it one of those procedures, which, for a time, there is a "run" on, and which subsequently settle down to reasonable conditions? I cannot think that nature is so often at fault as to demand universal interference. In a proportion of cases, no doubt, the operation is necessary, and, in after life, when untoward circumstances arise from a redundant and contracted prepuce, such cases had

been overlooked in infancy, but that does not seem to me to warrant its performance as a general practice. I am aware of the arguments advanced in favour of its being done in every case; some of them appear to be based on supposition.

When circumcision is necessary, why need it be done during the first few days of life, and why should the infant be deprived of the benefit of anaesthesia, which is, I believe, a common event? The testimony of attendant nurses, who have had to restrain the struggles and hear the screams of the unfortunate mite, does not induce in me the desire to witness the operation without the administration of an anaesthetic. I fail to see why the obviating of pain should not be accorded the youngest, as well as the older, subject.

The operation is not an emergency one, and no harm results from deferring it till the child is a little older.

My own practise is to wait till the patient is six or eight weeks old, and then circumcise under anaesthesia.

Yours, etc.,

J. I. SANGSTER.

Brighton, S.A.,

September 26, 1917.

Books Received.

- THE PRACTICAL MEDICINE SERIES, Under the General Editorial Charge of Charles L. Mix, A.M., M.D.; Volume III, The Eye, Ear, nose and Throat, Edited by Casey A. Wood, C.M., M.D., D.C.L., Albert H. Andrews, M.D., and George E. Shambaugh, M.D.; 1917 Series. Chicago: The Year Book Publishers; Melbourne: Stirling & Co.; Crown 8vo., pp. 372, illustrated. Price, 7s.
- LESSONS IN PHARMACEUTICAL LATIN AND PRESCRIPTION WRITING AND INTERPRETATION, by Hugh C. Muldoon, Ph.G.; First Edition; 1916. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Limited; Demy 8vo., pp. 173. Price, 6s. net.
- ELECTRO-THERAPY IN GYNECOLOGY, by Samuel Sloan, M.D., F.R.F.P.S.G.; 1917. London: William Heinemann, Ltd.; Royal 8vo., pp. 288. Price, 12s. 6d. net.
- LABORATORY MANUAL OF ORGANIC CHEMISTRY FOR MEDICAL STUDENTS, by Matthew Steel, Ph.D.; First Edition; 1916. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Limited; Royal 8vo., pp. 193. Price, 6s. net.
- THE DIAGNOSTICS AND TREATMENT OF TROPICAL DISEASES, by E. R. Stitt, M.D., Ph.G.; Second Edition; 1917. Philadelphia: P. Blakiston's Son & Co.; Demy 8vo., pp. 534, with 117 illustrations. Price, \$2 net.
- OTTITES ET SURDITES DE GUERRE, DIAGNOSTIC, TRAITEMENT, EXPERTISES, by H. Bourgeois and M. Sourdille; 1917. Paris: Masson et Cie; Crown 8vo., pp. 188, illustrated. Price, 4 francs.
- L'APPAREILLAGE DANS LES FRACTURES DE GUERRE, by Paul Alquier and J. Tanton; 1917. Paris: Masson et Cie; Royal 8vo., pp. 248, with 182 illustrations. Price, 7 fr. 50.
- THE GLUGS OF GOSH, by C. J. Dennis, with illustrations by Hal Gye; 1917. Sydney: Angus & Robertson, Ltd.; Small Foolscap Quarto, pp. 130. Price, 4s.
- SONGS OF A CAMPAIGN, by Leon Gellert; Third and Enlarged Edition, with pictures by Norman Lindsay; 1917. Sydney: Angus & Robertson, Ltd.; Small Foolscap Quarto, pp. 124. Price, 4s.
- DREEN, by C. J. Dennis; Illustrations by Hal Gye; 1917. Sydney: Angus & Robertson, Ltd.; Crown 8vo., pp. 25. Price, 1s.

Proceedings of the Australasian Medical Boards.

VICTORIA.

The following have been registered under the provisions of Part I of "The Medical Act, 1915," as duly qualified medical practitioners:—

- Aitchison, Robert Douglas, M.B. et Ch.B. Melb., 1917, Victoria Avenue, Albert Park.
- Backhouse, Thomas Clive, M.B. et Ch.B., Melb., 1917, 339 Collins Street, Melbourne.
- Bodycomb, David Henry, M.B. et Ch.B., Melb., 1917, 7 Munro Street, Armadale.
- Cato, Edwin Thomas, M.B., et Ch.B., Melb., 1917, Toorong Road, Hawthorn.
- Chambers, John Ferguson, M.B., et Ch.B., Melb., 1917, c/o. Union Bank, Collins Street, Melbourne.
- Graham, William Arnold, M.B., et Ch.B., Melb., 1917, "Arnold."
- Green, John Sydney, M.B., et Ch.B., Melb., 1917, 315 Auburn Road, Hawthorn.
- Hayes, William Ivan, M.B., et Ch.B., Melb., 1917, c/o. Dr. J. B. Hayes, Hamilton.
- Inglis, Edgar Montgomery Herbert, M.B., et Ch.B., Melb., 1917, 281 High Street, Kew.

Inglis, Lindsay Ballantyne Anderson, M.B., et Ch.B.,
Melb., 1917, 281 High Street, Kew.
Jacobs, Hubert Sydney, M.B., et Ch.B., Melb., 1917, 74
Alma Road, St. Kilda.
Luke, Walter Andrew, B.B., et Ch.B., Melb., 1917,
"Whitehall," Bank Place, Melbourne.
May, Donald Greig, M.B., et Ch.B., Melb., 1917, 5 Mem-
brey Street, Northcote.
Moore, William Harold James, M.B., et Ch.B., Melb.,
1917, 30 Balwyn Road, Canterbury.
O'Brien, John Phillip, M.B., et Ch.B., Melb., 1917, Erica
Avenue, East Caulfield.
Trembath, William Richard, M.B., et Ch.B., Melb., 1917,
Station Street, Fairfield.
Trumpy, David Ernest, M.B., et Ch.B., Melb., 1917,
Warragul.
Whitaker, John Grieve, M.B., et Ch.B., Melb., 1917, Can-
terbury Road, Canterbury.
Windmill, Annie Winifred, M.B., et Ch.B., Melb., 1917,
Noble Street, Geelong.
Worch, Desmond Chisholm, M.B., et Ch.B., Melb., 1917,
61 Stanhope Street, Malvern.

The following names of deceased practitioners have been
removed from the register:—

Salmon, Charles Carty.
Thomson, John.
Harkness, Edward.
Yuille, William Douglas.

Medical Appointments.

Dr. Robert Ernest Elworthy has been appointed Govern-
ment Medical Officer at Adelong, New South Wales.

In the *New South Wales Government Gazette*, No. 176, of Oc-
tober 5, 1917, it is announced that the resignation of Dr.
Clement Armour Verco, Medical Officer on probation, Medi-
cal Branch of the Department of Education, has been ac-
cepted. The last day of Dr. Verco's service was August
31, 1917.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum
tenentes sought, etc., see "Advertiser," page xvii.

The University of Melbourne, Department of Anatomy,
Stewart Lecturer in Anatomy, Stewart Scholar in Anatomy,
Lecturer in Histology and Embryology.

Department of Public Health, Tasmania, Government
Bacteriologist and Assistant Health Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any
appointment referred to in the following table, without
having first communicated with the Honorary Secretary
of the Branch named in the first column, or with the Medi-
cal Secretary of the British Medical Association, 429 Strand,
London, W.C.

Branch.	APPOINTMENTS.
TASMANIA. (Hon. Sec., Bel- erive, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
VICTORIA. (Hon. Sec., Medi- cal Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australasian Prudential Association Pro- prietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Ade- laide Street, Bris- bane.)	Medical Officers to the Selwyn Hos- pital, North Queensland. Brisbane United Friendly Society In- stitute.
SOUTH AUS- TRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
WESTERN AUS- TRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Penrith, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wall- send.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wel- lington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

- Oct. 16.—N.S.W. Branch, B.M.A., Executive and Finance
Committee.
Oct. 17.—W. Aust. Branch, B.M.A., Branch.
Oct. 19.—Q. Branch, B.M.A., Council.
Oct. 20.—Northern Suburbs Med. Assoc. (N.S.W.).
Oct. 20.—Eastern Suburbs Med. Assoc. (N.S.W.).
Oct. 25.—S. Aust. Branch, B.M.A., Branch.
Oct. 26.—N.S.W. Branch, B.M.A., Branch.
Oct. 30.—N.S.W. Branch, B.M.A., Medical Politics Commit-
tee; Organization and Science Committee.
Oct. 31.—Vict. Branch, B.M.A., Council.
Nov. 2.—Q. Branch, B.M.A., Branch.
Nov. 3.—Vict. Branch, B.M.A., Nomination Papers for
Election of Members of Council Issued.
Nov. 9.—S. Aust. Branch, B.M.A., Council.
Nov. 9.—N.S.W. Branch, B.M.A., Clinical.
Nov. 13.—Tas. Branch, B.M.A., Council and Branch.
Nov. 13.—N.S.W. Branch, B.M.A., Ethics Committee.
Nov. 14.—Vict. Branch, B.M.A., Branch.
Nov. 14.—North-Eastern Med. Assoc. (N.S.W.).

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any
circumstances be returned.
Original articles forwarded for publication are understood to be offered to
the *Medical Journal of Australia* alone, unless the contrary be stated.
All communications should be addressed to "The Editor," *The Medical
Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney,
New South Wales.